LAFAYETTE

PLACEWORKS

March 2021 | Public Review Initial Study

CANCER SUPPORT COMMUNITY INITIAL STUDY

for the City of Lafayette

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for the City of Lafayette

Prepared by:

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1. Introduction

This Initial Study for the Cancer Support Community (proposed project) was prepared by the City of Lafayette (City) to determine if the proposed project may have a significant effect on the environment. This Initial Study was prepared pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000 *et seq.*) and CEQA Guidelines (California Code of Regulations Sections 15000 *et seq.*). Pursuant to CEQA Guidelines Section 15051, the Town is the Lead Agency for the proposed project.

The project consists of a new campus for the Cancer Support Community, which includes a building, parking lot, outdoor gathering space, boardwalk, greenhouse, and amphitheater / outdoor movement space. For further details on the project, see Chapter 3, Project Description of this Initial Study.

1.1 INITIAL STUDY

Pursuant to Section 15063 of the CEQA Guidelines,[1] an Initial Study is a preliminary environmental analysis that is used by the lead agency as a basis for determining what form of environmental review is required for a project. The CEQA Guidelines require that an Initial Study contain a project description, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project's consistency with existing and applicable land use controls, and the name of persons who prepared the study.

1.2 REPORT ORGANIZATION

This Initial Study is organized into the following chapters:

- Chapter 1: Introduction. This chapter provides an introduction and overview of the Initial Study document.
- Chapter 2: Initial Study Checklist. A summary of the pertinent details for the proposed project, including lead agency contact information, proposed project location, and General Plan and Zoning designations are in this chapter. This chapter also summarizes the significant impacts that could occur from construction and operation of the proposed project and identifies the mitigation measures recommended to reduce the impact to a less-than-significant level.

[1] The CEQA Guidelines are found in California Code of Regulations, Title, 14, Section 15000 *et seq*.

- Chapter 3: Project Description. This chapter describes the location and setting of the proposed project, along with its principal components, as well as a description of the policy setting and implementation process for the proposed project.
- Chapter 4: Environmental Analysis. Making use of the CEQA Guidelines Appendix F, Energy Conservation, and Appendix G, Environmental Checklist, this chapter identifies and discusses anticipated impacts from the proposed project, providing substantiation of the findings made.
- Chapter 5: Mitigation Monitoring and Reporting Program. This chapter lists the impacts found to be significant and identifies the recommended mitigation measures categorized by impact area.
- Chapter 6: Organizations and Persons Consulted. This chapter presents a list of City, other agencies, and consultant team members that contributed to the preparation of the Initial Study.

2. *Initial Study Checklist*

2.1 EXECUTIVE SUMMARY

1.	Project Title:	Cancer Support Community
2.	Lead Agency Name and Address:	City of Lafayette Planning Department 3675 Mt Diablo Blvd # 210, Lafayette, CA 94549
3.	Contact Person and Phone Number:	Nancy Tran, Senior Planner City of Lafayette Direct: (925) 299-3219 | Main: (925) 284-1976
4.	Project Location:	City of Lafayette. See page 3-1 of Chapter 3.1, Project Site Location and Characteristics.
5.	Project Applicant's Name and Address:	Cancer Support Community, 3276 McNutt Avenue, Walnut Creek, CA 94597 Contact: James Bouquin, Phone: (925) 933-0107 Email: jbouquin@cancersupport.net
6.	General Plan Land Use Designation:	Rural Residential Single Family, Hillside Overlay Area
7.	Zoning:	LR-10 District
8.	Description of Project:	See Project Description in Chapter 3
9.	Surrounding Land Uses and Setting:	See page 3-3, Section 3.2 of Chapter 3, Project Description
10.	Other Public Agencies whose Approval is Required:	See page 3-27, Section 3.3 Required Approvals of Chapter 3, Project Description

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

The City has not received any request from any Tribes in the geographic area with which they are traditionally and culturally affiliated with or otherwise to be notified about projects in the City of Lafayette. Coordination pursuant to Assembly Bill 52 occurred between Sarah Fonseca, Cultural Resources Analyst at the Native American Heritage Commission and Nancy Tran, Senior Planner at the City of Lafayette on November 9, 2020.

2.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a potentially significant impact without mitigation, as indicated by the checklist.

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

2.3 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 potentially 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.

Approved by: Greg Wolff
Greg Wolff
Planning Director

March 22, 2021
Date

2.4 SUMMARY OF IMPACTS

The proposed project would mitigate all significant impacts to a less than significant level, therefore all CEQA level topic areas within this Initial Study Mitigated Negative Declaration were identified to have less than significant impacts. A detailed discussion of the project's impacts is provided in Chapter 4, Environmental Analysis, of this Initial Study.

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3. Project Description

The City of Lafayette, the project applicant, is proposing the Cancer Support Community project (proposed project or project), to develop the 5.75-acre applicant-owned parcel located at 4011 Mt. Diablo Boulevard in the City of Lafayette. The proposed project is a new campus for the Cancer Support Community, which includes a building, parking lot, outdoor gathering space, boardwalk, greenhouse, and amphitheater or outdoor movement space.

This chapter provides a detailed description of the proposed project, including the location, setting, characteristics of the project site, a project construction schedule, and required permits and approvals. Additional descriptions of the environmental setting discussions are included in Chapter 4, Environmental Analysis and Findings, of this Initial Study.

3.1 PROJECT SITE LOCATION AND SITE CHARACTERISTICS

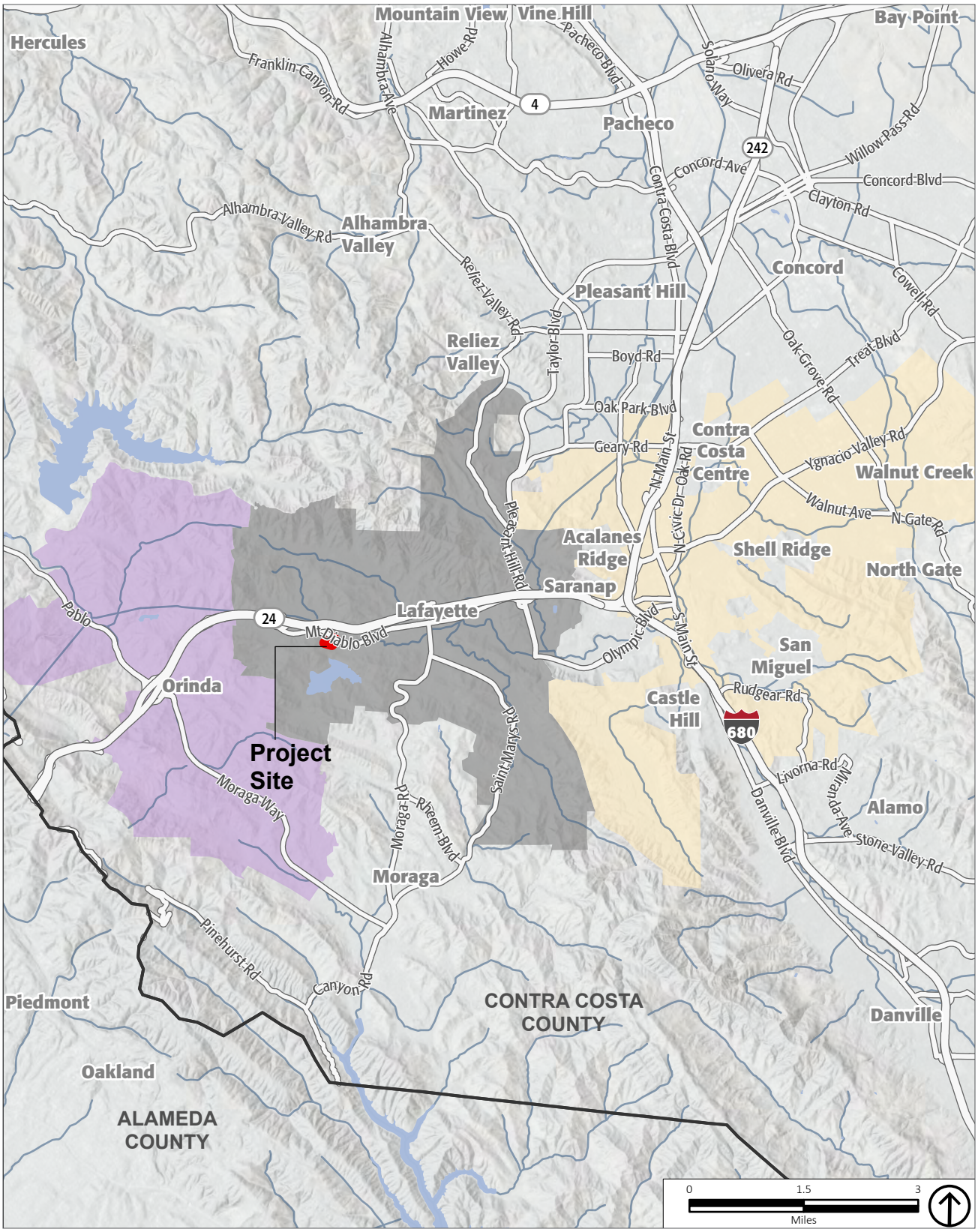
3.1.1 REGIONAL LOCATION

As shown on Figure 3-1, the project site is located in the City of Lafayette within Contra Costa County. The City of Lafayette is located 18 miles northeast of San Francisco and bordered by Briones Regional Park to the north, City of Walnut Creek to the east, City of Moraga to the south, and City of Orinda to the west.

Regional access to the project site is provided via State Route-24 (SR-24), a freeway just north of the project site that connects the cities to the west of the City of Lafayette, and Interstate 680 (I-680), a freeway in the vicinity of the project site that travels north-south of the city. Access to the project site from SR-24 is provided via the interchange at Acalanes Road. The project site is served by regional transit including the Bay Area Rapid Transit (BART) via the Lafayette BART station located about 0.5 miles to the northeast of the project site and by the Contra Costa Transit Authority (CCTA) via the County Connection's Bus Route 25 stop located about 0.3 miles northeast of the project site. The public use airport located nearest to the project site is Buchanan Field Airport, located at 550 Sally Ride Drive in Concord, California, approximately 10 miles northeast of the project site.[2] Heliports in the project area include the Sandhill Heliport located 7 miles northwest of the project site and the John Muir Memorial Hospital Heliport located 7 miles northeast of the project site.

[2] http://www.airnav.com/airports/us/CA

PROJECT DESCRIPTION



Source: PlaceWorks, 2020.

Project Site
Lafayette
Orinda
Walnut Creek

Figure 3-1
Regional Location

3.2.1 LOCAL SETTING

As shown on Figure 3-2, the project site is centrally situated within the undeveloped land south of Mt. Diablo Boulevard between the Risa Road/Mt. Diablo Boulevard intersection to the east of the project site and El Nida Ranch Road/Mt. Diablo Boulevard intersection to the west of the project site. The project site is bounded by Mt. Diablo Boulevard to the north, undeveloped land to the west, and an EBMUD easement directly to the south and east.

North of Mt. Diablo Boulevard, local access to the project site is provided by Mt. Diablo Boulevard, while regional access is provided by Happy Valley Road, Deer Hill Road, Dolores Drive, Mt. View Drive, Risa Road, and Village Center Drive. The project site is also accessed via pedestrian sidewalks and Class II bicycle lanes[3] on Mt. Diablo Boulevard.

3.2.2 EXISTING SITE CONDITIONS

The 5.75-acre site is assigned Assessor's Parcel Number (APN) 252-050-014. The project site is currently undeveloped with a gravel access road and gated entrance. The site slopes steeply down to the north and the east. Overall, there is a 135-foot difference in grade from Mt. Diablo Boulevard to south corner of the project site. Existing vegetation on the project site includes 144 trees comprised of California native species and ornamental varieties.[4] Photographs of the site are included in Figure 3-3.

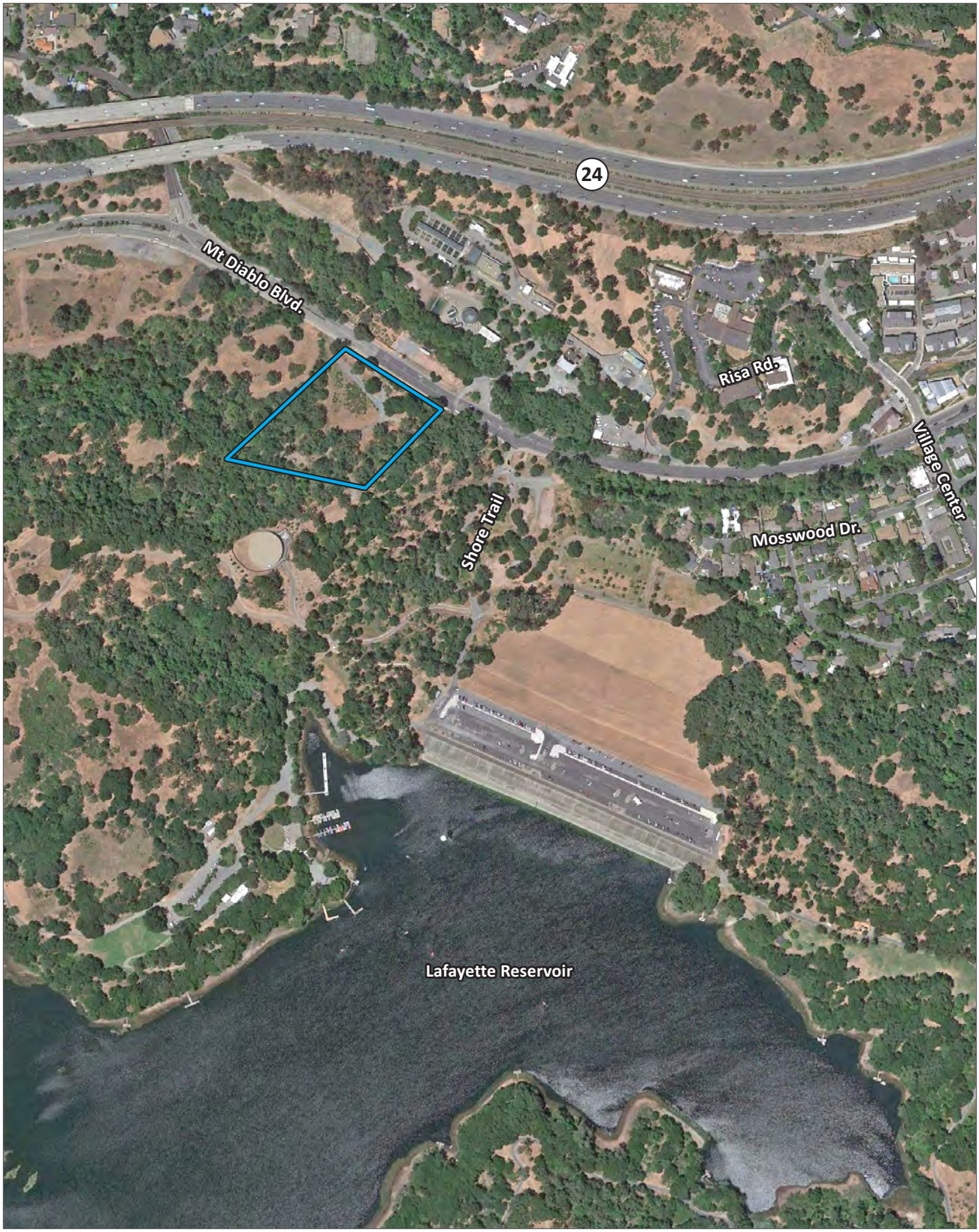
3.2.3 GENERAL PLAN AND ZONING DESIGNATION

3.2.3.1 GENERAL PLAN

The City of Lafayette General Plan designates the project site as Rural Residential Single Family, a land use designation intended to retain hillsides in a nearly a natural condition as is feasible while allowing residential development which is subordinate to and supportive of preserving scenic views and the natural hillside character of the area. Uses within the Rural Residential Single-Family land use designation generally support houses sited to blend into the natural environment and have minimal impacts on it with development density not exceeding 0.1 dwelling units per acre. The project site is also located in the Hillside Overlay Area as designated in the General Plan.

[3] A Class II Bikeway is an on-street facility with dedicated space for bicyclists, usually near the right side of the street. Bike Lanes are designated by roadway striping and signage.

[4] Traverso Tree Service, 2020, Cancer Support Community Center Arborist Report.



Source: Google, 2020. PlaceWorks, 2020.

Approximate Project Site

0 700
Scale (Feet)

Figure 3-2
Aerial View of Project Site

#1 - Aerial View - Looking South

#2 - Aerial View - Looking West

#3 - Entry Drive Location

#4 - Entry Drive/West Property Line

#5 - Bldg Area - East Property Line

#6 - Bldg Area - Looking Southeast

Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-3
Photographs of Project Site

The City regulates building height in Chapter I, the Land Use Element of the General Plan, as well as the zoning ordinance, the height limits contained in the General Plan are the same as those within the zoning ordinance. Building height affects the city's appearance and identity, and a key goal of the Land Use Element is to ensure that new development is designed to be sensitive to adjacent uses. By regulating building heights, the City can also protect view corridors, regulate building scale, and ensure consistency and compatibility within an area or along a street. The General Plan does not explicitly state a height limit for the project site but supports preservation of prominent views by limiting the height of development where necessary. Commercial development in Lafayette limits height to a total maximum of 35 feet, or three stories, with the ability to increase the height limit to 45 feet only if the City Council is able to make design review and height findings to grant an exception to the 35-foot height limit.

3.2.3.2 ZONING

The project site is zoned LR-10 District. Per Lafayette Municipal Code (LMC) Section 6-7201, the uses permitted in the LR-10 zoning district include a variety of uses such as single-family residences and accessory structures, keeping of livestock, small farming, home occupation, second units, animal farming, and supportive care. Conditional uses requiring a permit include a community building or club, whether or not operated for profit; a residential business; religious institutions; publicly owned buildings and structures; horticulture or similar agriculture uses; horse riding schools; kennels; recreation courts; or uses approved as comparable by the Planning Commission. Pursuant to LMC Section 6-720, new development requires the issuance of a hillside development permit. In addition, the maximum height limit shall not exceed 30 feet in height or two and one-half stories, whichever is less, and each building shall be at least 50 feet from the property line or easement lines. The project site is also within a ridgeline setback area. Per LMC Section 6-7211, parking and loading requirements for off-street parking for nonresidential developments must comply with parking lot design requirements detailed in LMC Section 6-608 and parking spaces are calculated as follows:

- assembly areas, 1.0 spaces per 40 square feet;
- office areas, 1.0 spaces per 250 square feet.[5]

[5] City of Lafayette Municipal Code, Title 6, Planning and Land Use, Chapter 6-6, Off-Street Parking, Article 4, Parking Ratios and Requirements, 2018.

3.2 PROPOSED PROJECT COMPONENTS

As previously stated, the proposed project is a new campus for the Cancer Support Community, including a building to house programs for those dealing with cancer and their families and support groups. The proposed project would also include two parking lots, an outdoor gathering space, a boardwalk, a greenhouse, and an amphitheater or outdoor movement space. As shown on Figure 3-4, the proposed project would be constructed on the applicant-owned parcel. The following sub-sections provide a detailed description of the key project components.

3.2.1 SITE PREPARATION AND CONSTRUCTION

Construction of the proposed project is expected to begin in 2021 and would consist of two phases:

- Phase I would occur for 18 – 22 months.
- Phase II would occur after completion of Phase I and for 5 – 6 months.
- Phases I and II occurring concurrently would occur for 21 – 25 months.

Grading and excavation of the project site would involve a total earthwork volume of approximately 15,000 cubic yards of soil. When possible, recycled materials would be used in construction and durable long lasting exterior finish materials would be incorporated throughout the project. Site preparation and construction activities would be done in compliance with the LMC, and erosion control measures would be implemented as required under the City's Stormwater Pollution Prevention regulations per LMC Chapter 5-4, Stormwater Management and Discharge Control.[6]
In order to reduce air quality pollution during the construction and operational phases, the proposed project includes the use of specialized equipment. During the construction phase, the proposed project includes construction equipment fitted with engines that meet the United States Environmental Protection Agency (EPA)-Certified Tier 4 emissions standards for all construction equipment of 50 horsepower or more. Construction equipment with Tier 4 engine controls, act to minimize exhaust-related particulate matter emissions during construction. The proposed project also includes the installation of air filters that have a minimum efficiency reporting value (MERV) of 12, herein referred to as MERV 12 air filters.[7] The MERV rating scale is a system that rates the effectiveness of the air filter. MERV ratings range from 1-16. The higher the MERV rating on a filter, the fewer dust particles and other contaminants can pass through it. To provide a sense of scale, consider that most residential systems can adequately remove airborne contaminants with a filter rated MERV 7 to 12, while a filter with a MERV 13 to 16 rating is typically found in hospital and general surgery settings.

[6] City of Lafayette Municipal Code, Title 5, Health and Sanitation, Chapter 5-4, Stormwater Management and Discharge Control, 2016.

[7] Minimum efficiency reporting value, commonly known as MERV rating, is a measurement scale designed in 1987 by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) to rate the effectiveness of air filters.

PROJECT DESCRIPTION

Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-4
Proposed Site Plan

3.2.2 COMMUNITY CENTER

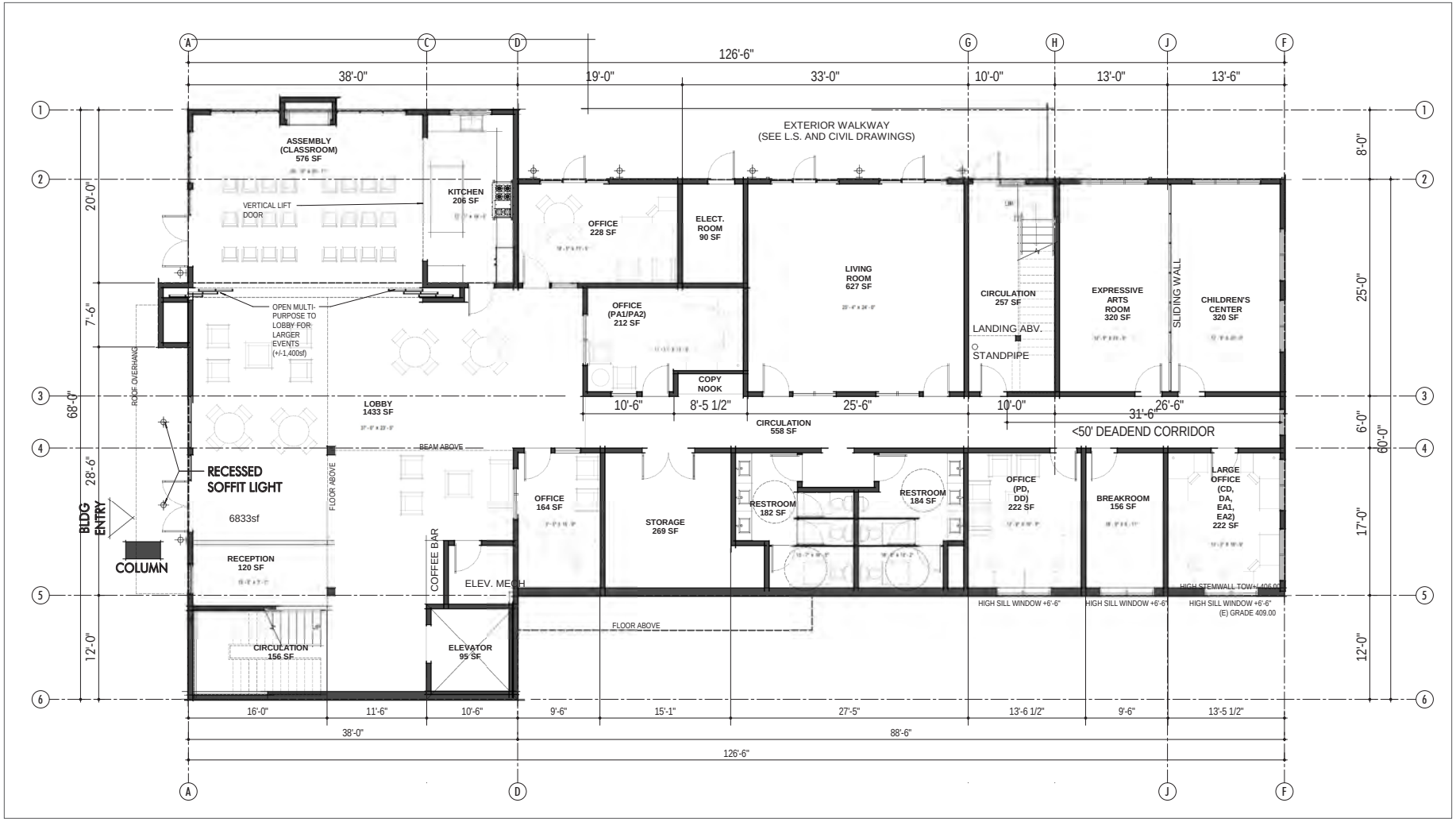
The proposed project would involve the construction of an 12,009 square foot building and 47 vehicular parking spaces, for a total footprint of 26,209 square feet. With a combination of offices and gathering spaces, the proposed project would accommodate up to 120 visitors at one time, using a requirement of 100 square feet per visitor based on the California Building Code occupancy standards.[8]

As shown on the site plan in Figure 3-4, the community center would be located towards the northern portion of the site. The first and second floor building plans of the Community Center are included in Figures 3-5 and 3-6. Additionally, renderings of the community center and its interior, as well as its placement on the project site are included on Figure 3-7.

The proposed project has been designed to blend in with the natural surroundings in compliance with the City of Lafayette Design Guidelines, as shown on Figures 3-8 through 3-10. Additionally, these figures demonstrate that the maximum height of the proposed project would be up to 33 feet and three inches. Meanwhile, the community center parking lot and community center building would be set back from Mount Diablo Boulevard at a distance of 82 feet and 134 feet, respectively (Figures 3-11 and 3-12).

[8] Alameda County, 2001, Methods for Determining Concentrations of People, available online at https://www.acgov.org/cda/planning/generalplans/documents/LVK_Appendix_D_Methods_For_Determining_Concentrations_of_People.pdf, accessed August 21, 2020.

PROJECT DESCRIPTION

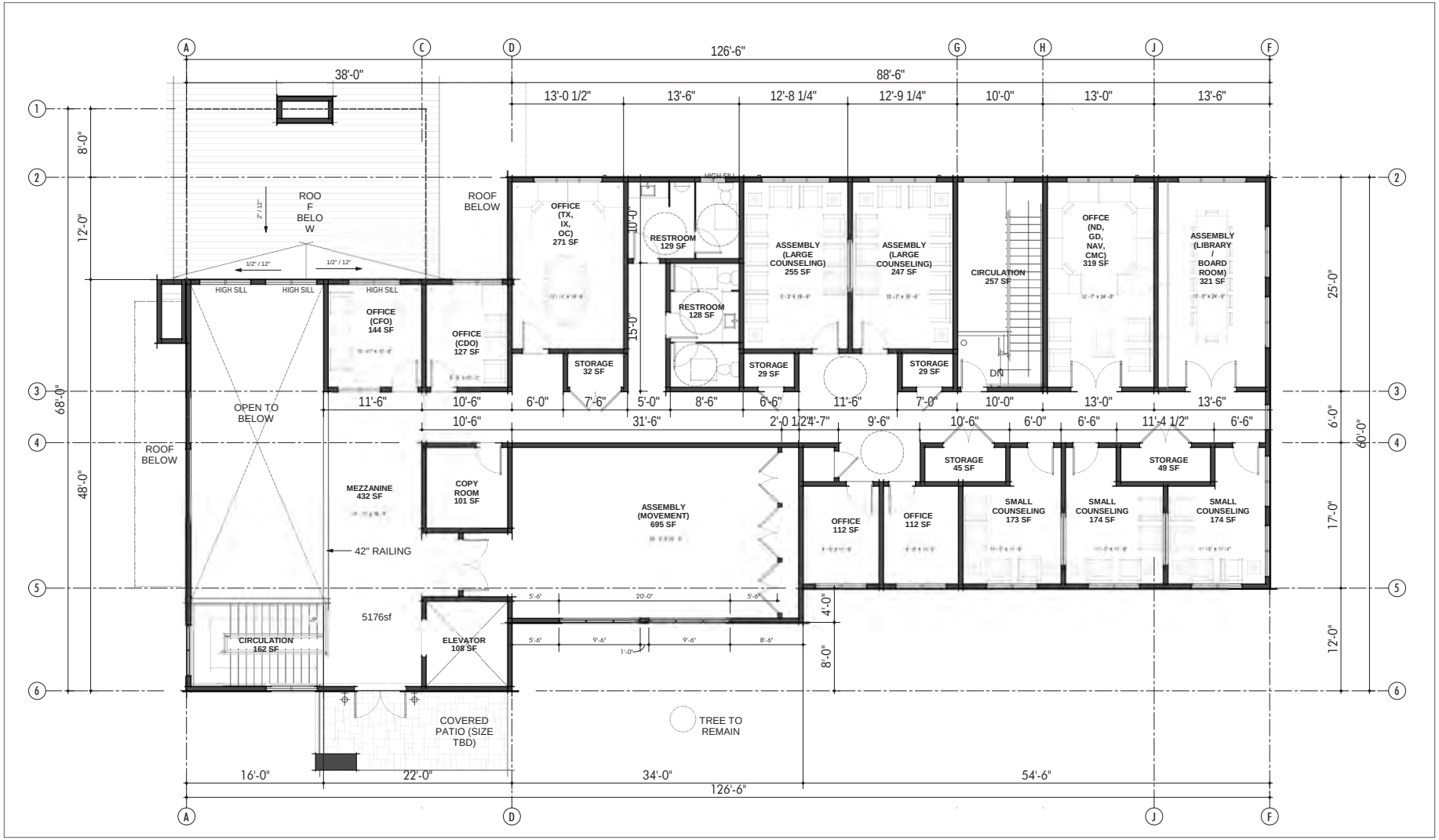


Source: Cancer Support Community, Planning Submittal, 2020.

0 16
Scale (Feet)

Figure 3-5
First Floor Building Floor Plan

PROJECT DESCRIPTION



Source: Cancer Support Community, Planning Submittal, 2020.

0 16
Scale (Feet)

Figure 3-6
Second Floor Building Floor Plan

Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-7
Proposed Project Renderings

Source: Cancer Support Community, Planning Submittal, March 2020.

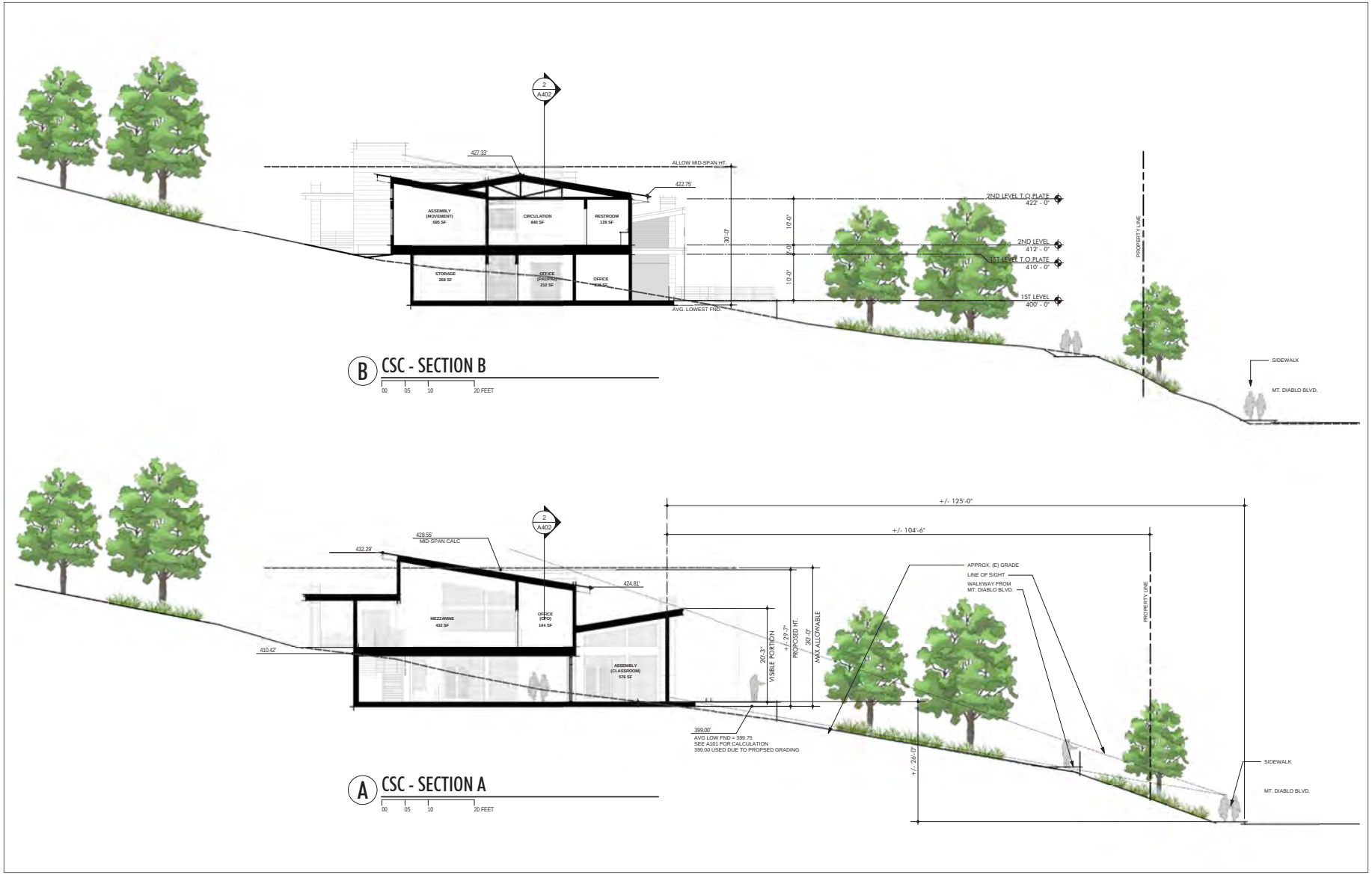
Figure 3-8

Proposed West and Noth Building Elevations

Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-9

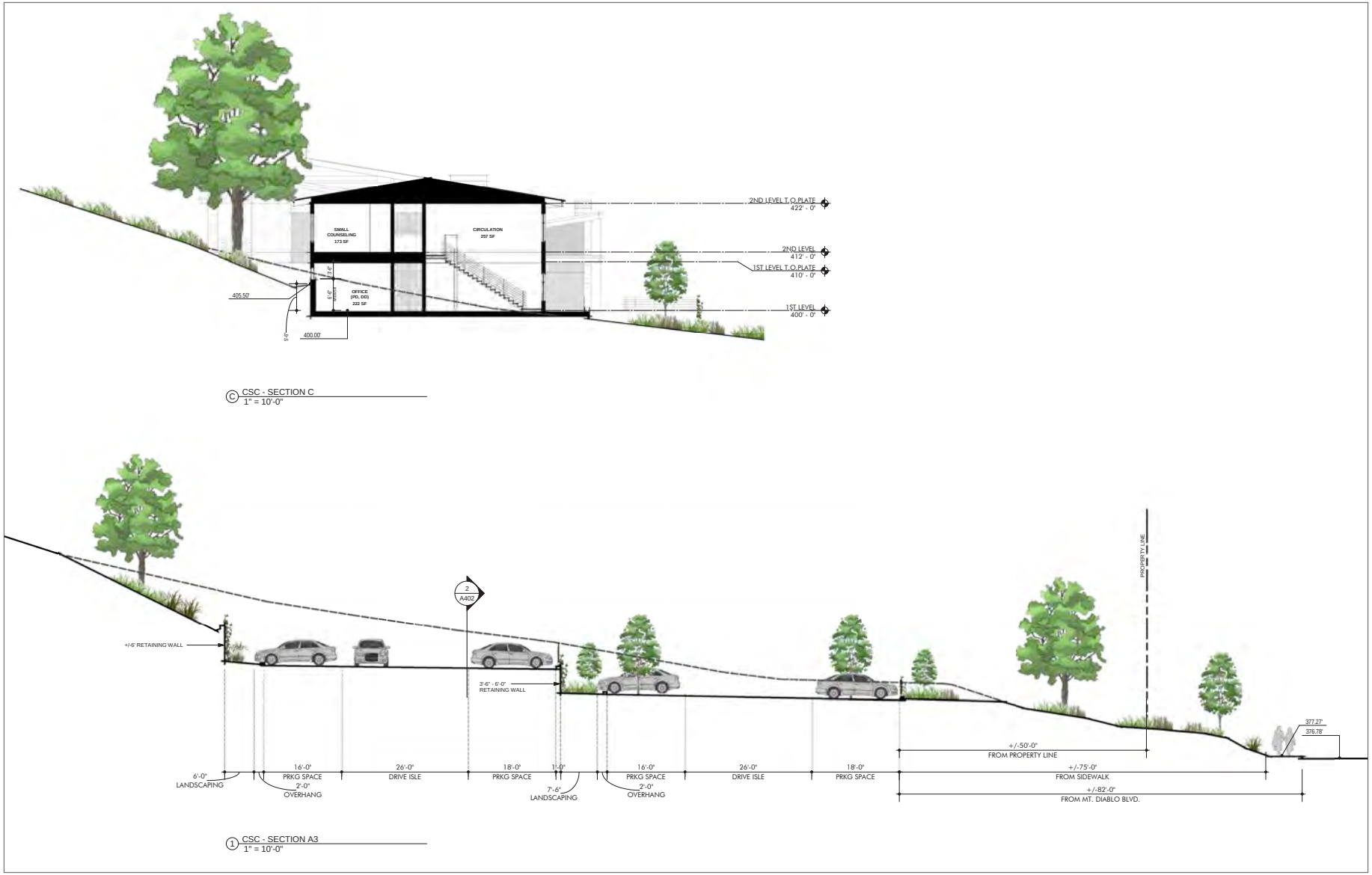
Proposed East and South Building Elevations



Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-10
Proposed Building Elevations

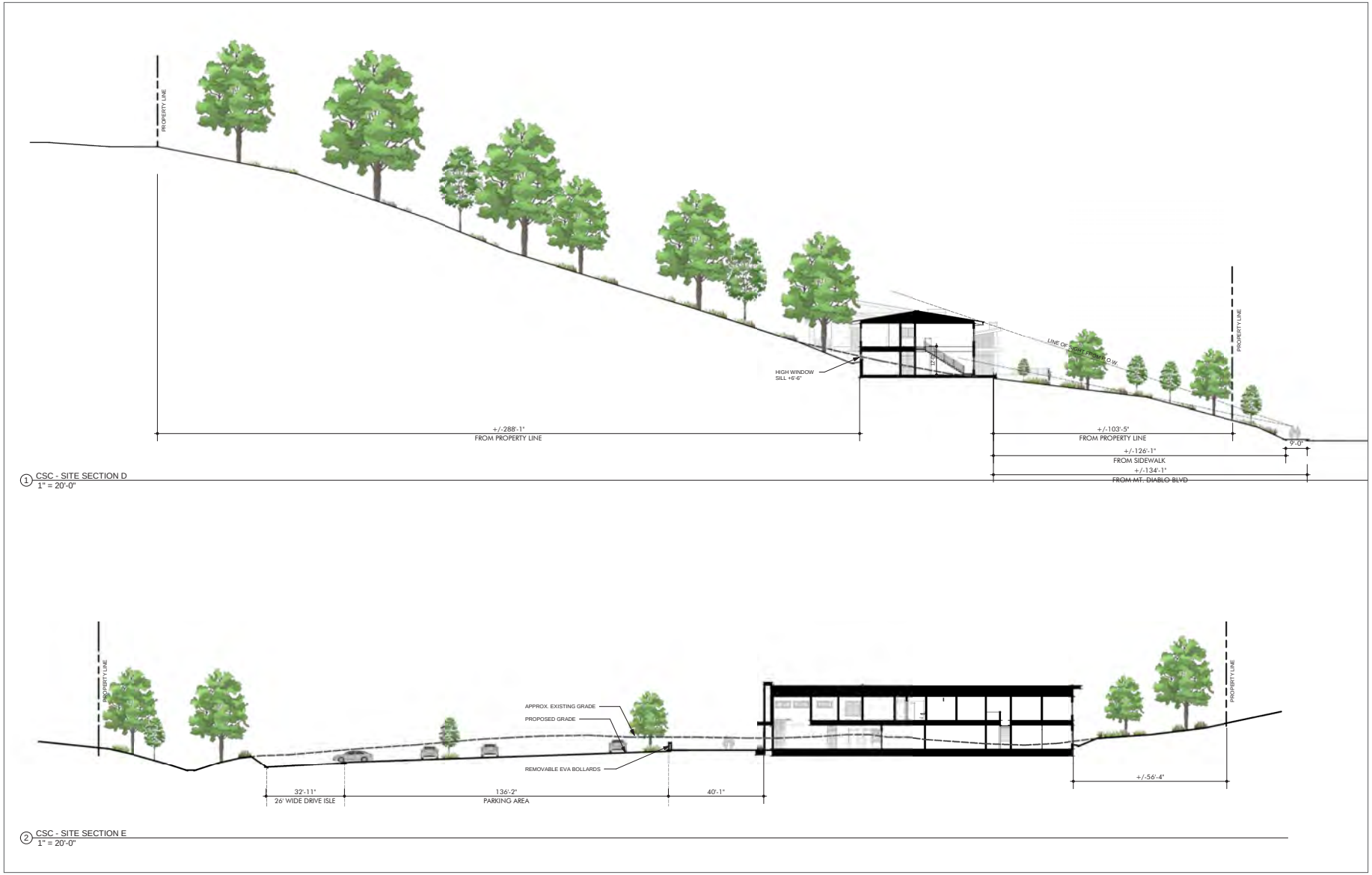
PROJECT DESCRIPTION



Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-11
Building and Parking Lot Back

PROJECT DESCRIPTION



Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-12
Building Set Back

3.2.3 FACILITY USES AND ACTIVITIES

The proposed project would offer a variety of professionally-led programs. These programs include educational workshops, support groups, and fitness classes, writing classes, as well as other activities. Table 3.2-1 shows the average daily attendance by hour of members for the calendar year 2019, which would continue at the new facility. Visitors typically come to a one-hour program and then leave. These numbers do not include staff or activity leaders. Total visits by Members in 2019 was approximately 23,000. Based on attendance data, the facility would average 74 visitors per weekday, and 75 on Saturdays.

TABLE 3.2-1 ACTIVITY INFORMATION

Hour	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00 AM		7					8
9:00 AM			12	23	7		
10:00 AM		10		28	1	3	33
11:00 AM			32		10	15	14
12:00 PM					1	6	8
1:00 PM		14	16		7	7	7
2:00 PM		5	4		8	5	5
3:00 PM			7	7	2	4	
4:00 PM		17	2	3			
5:00 PM		5	6		1		
6:00 PM			21	28		14	
7:00 PM		18		2	10		
Total		77	100	91	47	53	75

Source: Consultation with Cancer Support Community Staff.

Staffing at the new facility would consist of ten full time members arriving between 8 and 9 am and leaving between 4 and 5 pm Monday through Friday. Part time activity leaders would consist of six to ten people during the day. Part time staff would typically be on site for a one-hour activity only and would range from six to eleven times per day from Monday through Friday. Table 3.2-2 represents the schedule for three weeks in October 2020. This schedule is representative of future activity scheduling.

TABLE 3.2-2 ACTIVITY FREQUENCY

Week Date	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
10/12/2020		8	11	11	6	6	0
10/19/2020		9	10	8	6	7	3
10/26/2020		9	10	8	3	6	1
Average		8.7	10.3	9.0	5.0	6.3	1.3

Source: Consultation with Cancer Support Community Staff.

Special events are expected to occur routinely during the year. These activities are outlined in Table 3.2-3.

TABLE 3.2-3 SPECIAL EVENTS

Event	Number per Year	Typical Day/Time	Average Attendance	Total Vehicles
Kids Circle	12	Saturdays at 10:00am	31	16
Guest speaker	24	Tues or Wed at 6:00pm	37	33
Social event	6	Tues or Wed at 6:00pm	57	50
Kids Circle	12	Saturdays at 10:00am	31	16

Source: Consultation with Cancer Support Community Staff.

3.2.4 OPEN SPACE

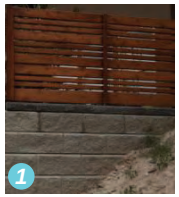
3.2.4.1 OUTDOOR RECREATIONAL AREA AND OPEN SPACE

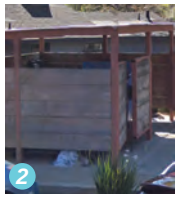
As shown on Figures 3-13 and 3-14, the proposed project would include an outdoor community space for visitor use that would be located on the southern portion of the project site. The outdoor amenities would include an outdoor plaza, Swerve bike racks, removable bollards for an EVA lane, an ADA-accessible boardwalk, a playground, a greenhouse, a vegetable garden, an overlook, and an amphitheater and outdoor movement space. In total, the proposed project would include 4,350 square feet of usable outdoor space for visitors, with 3,100 square feet on the front patio and 1,250 square feet within the rear amphitheater.

3.2.4.2 OUTDOOR BOARDWALK

The proposed project includes the installation of a boardwalk on the rear of the building. As shown on Figure 3-14, the pathway alignment consists of switchbacks along the steeper portions of the applicant-owned parcel to connect to the amphitheater. The proposed boardwalk would include lighting and landscaping as discussed in Sections 3.2.5, Lighting, and 3.2.6, Landscaping below.

PROJECT DESCRIPTION

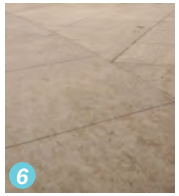

1 Block Retaining wall w/ Screen


2 Trash Enclosure


3 Accessible Boardwalk and Rails


4 Bike Racks (6 Capacity)


5 Moveable Pots on Casters w/ self watering system


6 Concrete Paving


7 Removable Bollards


8 Tables and Chairs


9 Railing on Retaining Block Wall


10 Benches

0 15 30

Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-13
Open Space Outdoor Features

PROJECT DESCRIPTION

1. Stormwater treatment area, typical
2. Tall shrubs to screen walls, typical
3. Native shrubs/groundcovers, typical
4. Existing trees to remain, typical
5. New native trees, typical
6. Parking lot, see Civil Plans
7. Trash Enclosure
8. Block Retaining Wall w/ Wood Screen
9. Outdoor gathering space: plaza
10. Swerve Bike racks (6 capacity)
11. Removable Bollards for EVA lane
12. Accessible Boardwalk
13. New asphalt road to conform to existing
14. Existing asphalt road
15. Phase 2: Playground, see sheet L4
16. Phase 2: Greenhouse
17. Phase 2: Accessible boardwalk
18. Phase 2: Veggie garden area with raised beds
19. Phase 2: Amphitheater and outdoor movement space

0 15 30 60

Landscape plan to adhere to Firewise Landscape Principles, which include:

- Automatic irrigation system to new plants,
- Defensible zones around the building,
- Selective pruning and thinning existing vegetation,
- Clearing all native, non-irrigated shrubs up to 30' away from the building,
- Spacing new vegetation to reduce fuel volume,
- Choosing low growing plants that aren't oily or resinous.

Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-14
Open Space Outdoor Plan

3.2.5 CIRCULATION, PARKING, AND SITE ACCESS

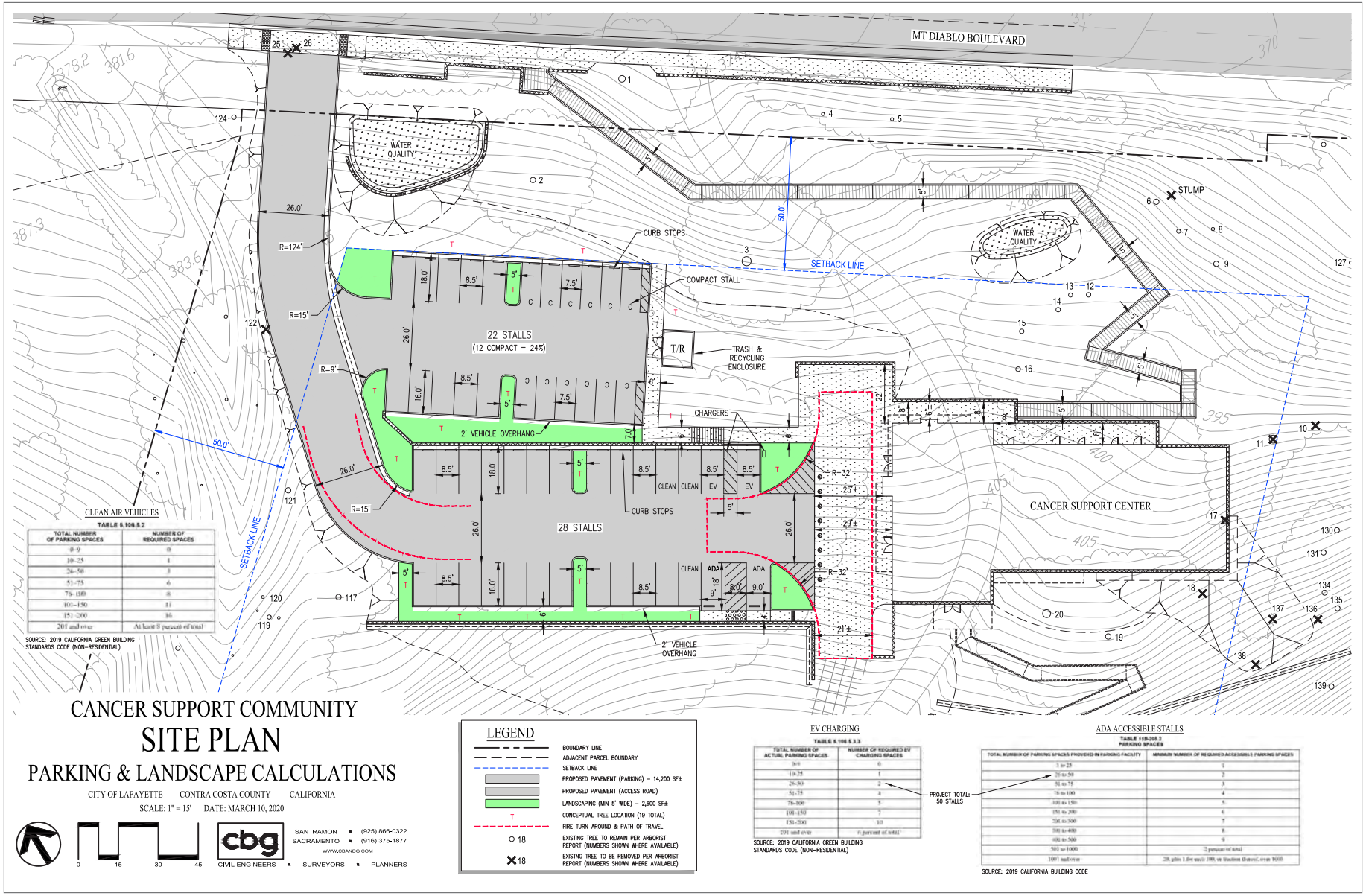
Vehicular access to the project site is currently provided by a gravel road turn out via Mt. Diablo Boulevard. The vehicular access point would lead to parking spaces on the western side of the community center. The parking lot would provide 50 26-foot-wide parking stalls, with two stalls for electric vehicle charging as required by the California Green Building Standards Code. The parking lot is shown on Figure 3-15. Pedestrian access to the project site would also be provided via the existing sidewalks on Mt. Diablo Boulevard. The site is also accessible by bicycle via the Class II bike lanes[9] on Mt. Diablo Boulevard that connect to the greater bicycle network in Lafayette and the region. The facility would provide six bicycle parking spots on-site.

3.2.6 LIGHTING

The source, intensity, and type of exterior lighting for the project site would be typical for orientation and safety needs, while minimizing night sky pollution. All on-site lighting would be low-level illumination and shielded to reduce light spill or glare. In landscaped and paved areas, light sources would be concealed and not visible from a public viewpoint. All exterior surface and aboveground mounted fixtures would be sympathetic and complementary to the architectural theme. The proposed project would install lighting features throughout the project site, including the proposed boardwalk and rear area.

[9] A Class II Bikeway is an on-street facility with dedicated space for bicyclists, usually near the right side of the street. Bike Lanes are designated by roadway striping and signage.

PROJECT DESCRIPTION



Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-15

Proposed Site Parking and Lot Landscaping

3.2.7 LANDSCAPING

As described above, the project site includes 144 trees in varying stages of health ranging from poor to excellent. As shown on Figure 3-16, 14 existing trees are proposed for removal. An additional 5 trees may need to be removed if encroachment is high during construction. Tree removal would comply with the standards identified in LMC Chapter 6-17, tree protection.[10] As shown on Figure 3-16, the proposed project would introduce a total of 44 trees throughout the project site and along the perimeter. Proposed trees include California Buckeye (*Aesculus californica*), Western Hazelnut (*Corylus cornuta*), Coast live oak (*Quercus agrifolia*), Valley Oak (*Quercus lobata*), and Vine Maple (*Acer circinatum*). The proposed landscaping would also include plantings of grasses, shrubs, and other ground cover. [11]

All planted areas would be irrigated via an irrigation system designed to meet all City of Lafayette Water Conservation requirements, including grouping valves by hydrozones, water use calculations, and irrigation schedule, in accordance with those outlined in the City's Environmental Action Plan.[12] The irrigation system could include a low precipitation rate irrigation system consisting exclusively of drip irrigation, with the exception of the non-mowed grass areas. The irrigation system could be equipped with a weather based smart controller and would have a flow sensor, moisture sensor, rain shutoff and multiple start times. All plant materials proposed for the project's landscaping would be compliant with the State Water Conservation water use classification of landscape species plant materials list.[13]

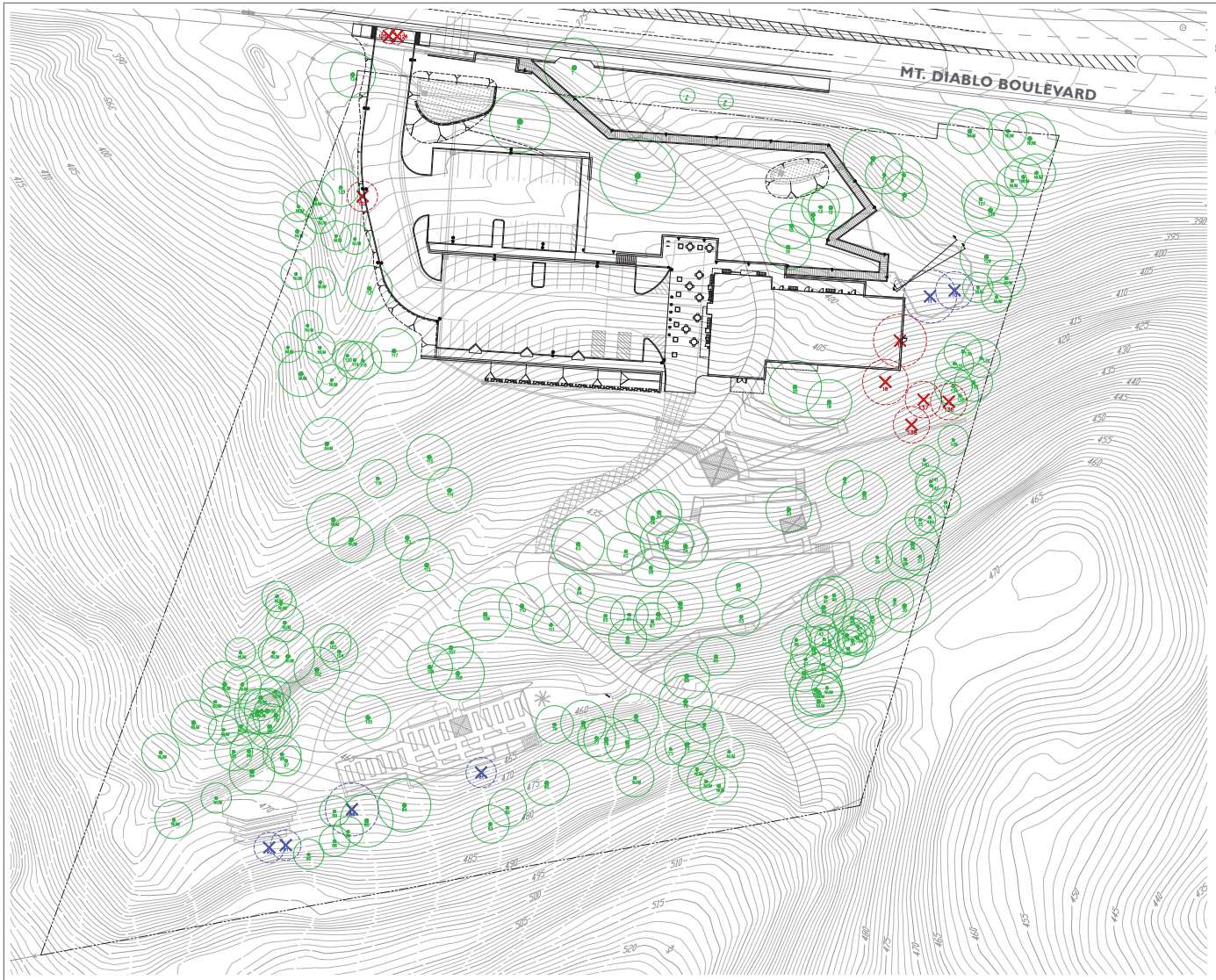
[10] City of Lafayette Municipal Code, Title 6, Planning and Land Use, Part 4, Special Land Use Regulations, Chapter 6-17, Tree Protection, 2016.

[11] Traverso Tree Service, 2020, Cancer Support Community Center Arborist Report.

[12] City of Lafayette, 2017, Environmental Action Plan, available online at https://www.lovelafayette.org/home/showdocument?id=4138, accessed December 8, 2020.

[13] Water Use Classification of Landscape Species, Plant Search Database, https://ucanr.edu/sites/WUCOLS/Plant_Search/, accessed May 21, 2020.

PROJECT DESCRIPTION



TREE REMOVAL LEGEND

- TREES TO BE REMOVED (PHASE1)
- TREES TO BE REMOVED (PHASE 2)
- TREES TO REMAIN

TREE MITIGATION PHASE 1 CALCS

#	Species	DBH	Calc DBH
17	Valley Oak	20	
18	California Black Oak	18	
122	Coast Live Oak	7	
125	Valley Oak	6,8	9.24
126	Valley Oak	18	
136	California Bay	9	
137	Valley Oak	14.5	
138	Valley Oak	12	

TOTAL REMOVAL INCHES: 107.74

REQUIRED MITIGATION
TOTAL # MITIGATION TREES (15 GAL): 36
or IN-LIEU FEE ($260/15 GAL): $9,360

PROVIDED MITIGATION
TOTAL # MITIGATION TREES (15 GAL): 44

See Appendix

NOTE: SEE ARBORIST REPORT FOR COMPLETE TREE CHART

0 15 30 60

Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 3-16
Proposed Tree Removal Plan

3.2.8 UTILITIES

The proposed project would use existing connections to sanitary sewer infrastructure and would extend the water main to connect to the existing waterline at the Lafayette Reservoir entrance Additionally, a stormwater treatment area would be designated north of the parking lots on the project site for storm drain management on-site. The preliminary stormwater control plan is included within Section X, Hydrology, of the Environmental Analysis Chapter.

Utility providers for the proposed project include:

- The East Bay Municipal Utilities District (EBMUD) is responsible for water provision.
- Central Contra Costa Sanitary District (CCCSD) is responsible for wastewater collection, treatment, and disposal.
- Pacific Gas and Electric Company (PG&E) would provide natural gas and electricity services.
- Central Contra Costa Solid Waste Authority (CCCSWA) provides solid waste and residential recycling services for Contra Costa County and is responsible for recycling and solid waste management in Lafayette.
    - The Project would be served by the Keller Canyon Landfill in Contra Costa County for ultimate disposal.
- Contra Costa County Fire Protection District (CCCFPD) provides fire protection and Emergency Medical Services.

3.3 REQUIRED APPROVALS

The proposed project would require approval of the Mitigated Negative Declaration and the project by the City of Lafayette Planning Commission.

The project would also require:

- Grading and building permits.
- Hillside development permit pursuant to sections 6-2061 et seq.
- A land use permit (Conditional Use Permit) from the planning commission.
- A Design Review Permit.
- A category II permit for the removal of any “protected tree.”
- An encroachment permit and agreement for any work within the public right of way.

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4. Environmental Analysis

4.1 DISCUSSION OF ENVIRONMENTAL EVALUATION

I. AESTHETICS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
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) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	❒	❒	■	❒
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	❒	❒	■	❒

EXISTING CONDITIONS

The project site is currently an undeveloped parcel with a gravel access road and gated entrance. The site slopes steeply down to the to the south and the east. Overall, there is a 135-foot difference in grade from Mt. Diablo Boulevard to south corner of the project site. Existing vegetation on the project site includes 144 trees comprised of California native species and ornamental varieties.[14] Travelling west on Mt. Diablo Boulevard, from the urbanized central area, the view transitions to a heavily vegetated area shaded by large oak trees, with intermittent views of the Lafayette Community Garden to the north and the entrance to the Lafayette Recreation Area to the south. The project site is 0.25 miles west of the reservoir entrance, and the view from the westbound direction is of intermittent trees and shrubs, with filtered and limited views of the existing road and graded lot. A large sport and recreation building is located north west of the proposed project. The building and outdoor facilities are set back from Mt. Diablo Boulevard at a lower elevation to help reduce the scale of the development.

[14] Traverso Tree Service, 2020, Cancer Support Community Center Arborist Report.

Scenic corridors, along highways, consist of land visible from highway right of ways and are comprised primarily of scenic and natural features where corridor boundaries are determined by the topography, vegetation, viewing distance, and jurisdictional lines.[15] Scenic vistas are generally interpreted as long-range views of a specific scenic feature (e.g., open space lands, mountain ridges, bay, or ocean views).

For the purposes of the aesthetic analysis in this Initial Study, the study area includes any scenic viewing corridor, entryway, or character area as defined by the City of Lafayette's General Plan and scenic highways as defined by the California Department of Transportation (Caltrans) that are adjacent to the project site or have publicly accessible views to scenic resources that could be obstructed by the development of the proposed project.[16] The project site and surrounding area is not considered a scenic viewing corridor,[17] entryway, [18] or character area,[19] under the City of Lafayette General Plan. However, views of the area along the Mt. Diablo Boulevard corridor are of large areas of wooded, open space areas, with views of some buildings and developed area. In addition, State Route 24 (SR-24) is a State-designated scenic highway.[20] The long-range views to the scenic ridgeline to the north of the project site is considered a scenic resource; however, due to the increase in elevation between Mt. Diablo and the project site, the ridgeline is not currently visible from this publicly-accessible location.

Under current conditions, there are no sources of light emanating from the project site. Nearby sources of light are minimal but include nighttime traffic lights emanating from vehicles on Mt. Diablo Boulevard and security lighting at nearby sites including the community garden, recreation area and sports building parking lot. Existing daytime glare occurs from the light reflecting off cars parked in the small parking lot serving the community garden north of the project site.

The mature trees north of and throughout the project site serve as a visual buffer to the views of the site from Mt. Diablo Boulevard and State Route 24 (SR-24), which is a State-designated scenic highway. Furthermore, the 135-foot grade difference from the southern corner of the project site down to Mt. Diablo Boulevard also serve as a visual buffer to the views from Mt. Diablo Boulevard. Similarly, the views of the project site from the south, east, and west, which are not publicly accessible, are generally blocked by the existing vegetation on along the perimeter of the site.

[15] Caltrans, 2020. Scenic Highways – Frequently Asked Questions. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways/lap-liv-i-scenic-highways-faq2, accessed December 4, 2020.

[16] Caltrans, 2020. Scenic Highways – Frequently Asked Questions. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways/lap-liv-i-scenic-highways-faq2, accessed December 4, 2020.

[17] City of Lafayette General Plan, Map I-5, Scenic View Corridor.

[18] City of Lafayette General Plan, Map I-2, Entryway.

[19] City of Lafayette General Plan, Map I-6, Character Area.

[20] California Scenic Highway Program, California Department of Transportation (Caltrans) website, https://dot.ca.gov/-/media/dot-media/programs/design/documents/desig-and-eligible-aug2019_a11y.xlsx, accessed on June 1, 2020.

Applicable General Plan Policies and Programs

The City of Lafayette General Plan, adopted on October 28, 2002, includes several goals and policies that relate to aesthetics. Specifically, Chapter I: Land Use Element that includes goals and policies aimed at protecting and enhancing the City's physical and visual character and ensuring development respects the natural environment. In addition, Chapter III: Open Space and Conservation Element includes goals and policies aimed at preserving areas of visual prominence and maintaining the semi-rural character and beauty of the city by preserving its open and uncluttered natural topographic features.[21]

DISCUSSION

a)

As described above, there are no identified scenic resources in the study area that are visible from publicly accessible viewing points surrounding the project site. The project site is located on a downward north-sloping hill south of Mt. Diablo Boulevard and as a result any publicly accessible long-range views to the scenic ridgeline to the north of the project are not impaired from Mt. Diablo Boulevard. Furthermore, because the project site is to the south of SR-24, it would not obstruct any views to this scenic ridgeline from travelers on SR-24; therefore, no impact to the views of the scenic ridgeline to the north would occur as a result of the proposed project. Accordingly, *no impact* to scenic vistas would occur.

b)

The project site is not visible from SR-24 to the south due to the tree line located between the project site and SR-24. As shown in Figure 4.1-1, the proposed project would not block or obstruct views beyond existing conditions with landscaping with 2-year and 7-year plantings, respectively. Long-range views of the scenic ridgelines from the segment of SR-24, a State-designated scenic highway,[22] are to the north of the highway; therefore, *no impact* to these views as a result of the proposed project would occur.

[21] City of Lafayette, 2002, General Plan, available online at https://www.lovelafayette.org/city-hall/city-departments/planning-building/general-master-specific-plans/general-plan, accessed October 15, 2020.

[22] California Scenic Highway Program, California Department of Transportation (Caltrans) website, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm, accessed on November 6, 2020.

DUSK RENDERING

DAY RENDERING

Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 4.1-1
Project External Renderings

c)

As described above, the project site is located in an existing undeveloped area of the city with parcels south, east, and west of the project site not publicly accessible and generally blocked by the existing vegetation on each border. The project proposes construction of a new campus for the Cancer Support Community, including a two-story building to house programs for those dealing with cancer and their families and support groups. The proposed project would also include two small parking lots, an outdoor gathering space, a boardwalk, a greenhouse, and an amphitheater or outdoor movement space. While the proposed project would represent a change to the existing visual character of the site, this type of development is consistent with the General Plan land use designation and Zoning district. The conditionally permitted uses and development standards outlined in Section 6-7201, LR-10 zoning district, of the LMC, allow for a community building or club, whether or not operated for profit.[23] The maximum height of the proposed project would be slightly less than 30 feet, which complies with the height limits per the LMC. In addition, the overall building design includes architectural variety through the uses of articulated windows and balconies and a range of facade material to break up the building mass. The proposed landscaping (see Figure 3-18 and 3-19 in Chapter 3, Project Description, of this Initial Study) has been designed to blend with the natural surroundings of the project site and the surrounding area.

The design of the project would also be subject to review by the City's Planning Commission to ensure consistency with the land uses in the general area. Therefore, development of the proposed project would not substantially degrade the visual quality of the site or its surroundings and associated impacts would be *less than significant.*

d)

The proposed project would increase the amount of buildings on the project site that would include indoor and outdoor lighting that would vary according to the type and intensity of use for outdoor spaces and activities and for safety, security, and vehicular and pedestrian movement. With development of the proposed project, new sources of interior and exterior lighting would be installed for the cancer support building, parking lots, rear activities area, and landscaping per current LMC lighting standards. The exterior lighting provided on and around the cancer support building would largely be contained under the roofs and the existing-to-remain and proposed new tree canopy. In the walkways and outdoor gathering spaces, lighting would meet or exceed levels needed to assure adequate orientation and safety. Lights near the property line of the project site would be directed so as to minimize any spill-over lighting to the maximum extent practicable. In landscaped and paved areas, light sources would be limited from public viewpoints from Mt. Diablo Boulevard. All exterior surface and above-ground mounted fixtures would be sympathetic and complementary to the architectural theme.

The nearest land uses sensitive to spill light are the low-density open space-compatible uses to the east, west, and north of the project site. The proposed project is separated from the adjacent open space land uses to the east by an approximately 50-foot-wide landscaped buffer; near the southwest corner by an

[23] Title 6, Planning and Land Use, Part 3, Land Use Districts, Article 10, Low Density Residential District-10, Chapter 6, Section 6-7204, Uses Requiring a Permit.

approximately 288 foot wide landscape buffer; and near the northwest corner with an approximately 50 foot landscaped buffer. Exterior lights for safety, security, and building illumination would not create substantial spill light at these distances with the existing and proposed landscaping in between Mt. Diablo Boulevard would be separated from the project site by the proposed approximately 50-foot landscaped buffer and approximately 10-foot elevation drop. Accordingly, the proposed lighting would not adversely affect nighttime views as seen from Mt. Diablo Boulevard. Overall, interior, and exterior lighting provided by the proposed project would be consistent with the semi-rural context of the project site and would not be considered substantial.

The building exterior would consist of low-glare materials per LMC design standards; the proposed project would not create substantial glare such that could degrade daytime or nighttime views or pose a hazard to drivers on nearby roadways. The project site, as previously described, contains 144 trees, and would plant 39 trees to replace 14 removed trees which would further screen the buildings and reduce glare. Overall, the proposed project would not contribute to substantially increased glare.

Compliance with the County Code Article 76-4.612, adopted by the City, requires lighting fixtures to be installed, controlled, or directed so that light would not glare or be blinding to pedestrians, vehicular traffic, or on adjacent properties. In addition, sources of illumination are required to be screened from public view and designed to avoid glare onto a street or adjacent property. Therefore, compliance with applicable regulations and project design features would ensure that impacts related to light and glare would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

II. AGRICULTURE AND FORESTRY RESOURCES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	❒	❒	❒	■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	❒	❒	❒	■
c) Conflict with existing zoning for, or cause rezoning of, forestland (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) Conflict with existing zoning for, or cause rezoning of, forestland (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))?	❒	❒	❒	■
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	❒	❒	❒	■

EXISTING CONDITIONS

The City of Lafayette contains no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance according to the Contra Costa County Important Farmland map produced by the California Department of Conservation Division of Land Resource Protection Farmland Mapping and Monitoring Program.[24] According to the Contra Costa County Important Farmland map, all land in the City of Lafayette is classified as either Urban and Built-Up Land, Grazing Land, or Other Land. Urban and Built-Up Land is defined as land having a building density of "at Least 1 Unit to 1.5 Acres, or Approximately 6 Structures to a 10-Acre Parcel." Grazing Land is defined as "land on which the existing vegetation is suited to the grazing of livestock." Other Land is simply land that is not included in other mapping categories, and in the case of the City of Lafayette, applies to low density rural development, as well as wetland and riparian areas which are not suitable to agriculture or aquaculture. The project area is on the border between Urban and Built-Up Land and Grazing Land, with most of the site located within the area designated Grazing Land.

DISCUSSION

a) – e)

[24] California Department of Conservation, 2016, California Important Farmland Finder, available online at https://maps.conservation.ca.gov/DLRP/CIFF/, accessed September 26, 2020.

The California Department of Conservation manages the Farmland Mapping and Monitoring Program (FMMP), which identifies and maps significant farmland. Farmland is classified using a system of five categories including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS). The California Department of Conservation manages an interactive website, the California Important Farmland Finder. This mapping program identifies the project site as a combination of Built-Up Urban Land and Grazing Land; therefore, it is not considered agriculturally important land.[25]

As stated above in the Existing Conditions, The City of Lafayette contains no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No designated forest land exists within the project area, and the proposed project would not result in the loss of forest land. The project areas are not subject to a Williamson Act contract.[26] Therefore, the proposed ordinance amendments would result in *no impact* to agriculture or forestry resources.

MITIGATION MEASURES

None required.

[25] California Department of Conservation. California Important Farmland Finder (CIFF). 2018. https://maps.conservation.ca.gov/dlrp/ciff/. Accessed September 27, 2020

[26] California Department of Conservation, 2019, Williamson Act Program, available online at https://www.conservation.ca.gov/dlrp/wa, accessed September 26, 2020.

III. AIR QUALITY

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	❒	❒	■	❒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or State ambient air quality standard?	❒	❒	■	❒
c) Expose sensitive receptors to substantial pollutant concentrations?	❒	❒	■	❒
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	❒	❒	■	❒

EXISTING CONDITIONS

The proposed project site is currently undeveloped and, therefore, does not generate any air pollutant emissions associated with the burning of fossil fuels in cars (mobile sources); energy use for cooling, heating, and cooking (energy); and landscape equipment use (area sources).

Regulatory Framework

Pollutants emitted into the ambient air by stationary and mobile sources are regulated by the Federal Clean Air Act (Federal CAA). The Federal CAA was passed in 1963 by the United States Congress and has been amended several times. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Federal CAA requires the USEPA to define national ambient air quality standards (AAQS) and allows states to adopt more stringent standards or to include other pollutants.

The California Clean Air Act (California CAA), signed into law in 1988, is administered by the California Air Resources Board (CARB) at the state level under the California Environmental Protection Agency. CARB is responsible for meeting the state requirements of the Federal CAA, administering the California CAA, and establishing the California AAQS. The California CAA requires all air districts in the state to achieve and maintain the California AAQS. CARB also regulates mobile air pollution sources such as motor vehicles. CARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB has established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional level. CARB also conducts or supports research into the effects of air pollution on the public and develops approaches to reduce air pollutant emissions.

Air Pollutants of Concern

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law under the Federal Clean Air Act (CAA) and the California CAA, respectively.[27][28] The Federal CAA requires the United States Environmental Protection Agency (EPA) to define national ambient air quality standards (AAQS) and allows states to adopt more stringent standards or to include other pollutants.[29] At the state level, the California CAA, is administered by the California Air Resources Board (CARB) under the California EPA. CARB is responsible for meeting state requirements of the Federal CAA, administering the California CAA, and establishing the California AAQS, which all air districts within the state are required to achieve and maintain. CARB also regulates mobile air pollution sources such as emission standards and fuel specifications for vehicles sold in California, consumer products, and certain off-road equipment. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional level. CARB also conducts or supports research into the effects of air pollution on the public and develops approaches to reduce air pollutant emissions.

The Federal pollutants under the national AAQS are categorized as primary and/or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG) (also referred to as volatile organic compounds [VOC]), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particular matter ($PM_{2.5}$), and lead (Pb) are considered as primary air pollutants. All of these, except for ROGs are "criteria air pollutants," which means that AAQS have been established for them.[30] The Federal and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

In addition to criteria air pollutants, both the State and federal government regulate the release of toxic air contaminants (TACs). Common sources of TACs include mobile sources (e.g., cars, trucks, and buses) and stationary sources (e.g., factories, refineries, and power plants). The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the Federal Clean Air Act (42 United States Code Section 7412[b]) is a TAC.

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[27] United States Environmental Protection Agency, 2019, Summary of the Clean Air Act, available online at https://www.epa.gov/laws-regulations/summary-clean-air-act, accessed March 27, 2020.

[28] United States Environmental Protection Agency, 2019, Clean Air Act Permitting in California, available online at https://www.epa.gov/caa-permitting/clean-air-act-permitting-california, accessed March 26, 2020.

[29] United States Environmental Protection Agency, 2017, Reviewing National Ambient Air Quality Standards (NAAQS): Scientific and Technical Information, available online at https://www.epa.gov/naaqs, accessed March 27, 2020.

[30] United States Environmental Protection Agency, 2018, Criteria Air Pollutants, available online at https://www.epa.gov/criteria-air-pollutants, accessed March 26, 2020.

Under State law, the California Environmental Protection Agency (CalEPA), acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.[31]

Regional Air Quality

California is divided geographically into air basins for the purpose of managing the air resources of the State on a local and regional basis. An air basin generally has similar meteorological and geographic conditions throughout that area. The project site is in the San Francisco Bay Area Air Basin (SFBAAB). Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.[32]

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to air quality. Specifically, Chapter III: Open Space and Conservation Element includes goals and policies aimed at improving air quality by focusing on mitigating and identifying the air quality impacts of new development, especially to sensitive receptors such as schools, parks, among others. These measures also ensure compliance with regional and State air quality standards.[33]

DISCUSSION

The Air Quality section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthful pollutant concentrations. A background discussion on the air quality regulatory setting, meteorological conditions, existing ambient air quality in the vicinity of the project site, and air quality modeling can be found in Appendix A.

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone (O_3), carbon monoxide (CO), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead (Pb). Areas are classified under the federal and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The San Francisco Bay Area Air Basin (SFBAAB), which is managed by the Bay Area Air Quality Management District (BAAQMD or Air District), is

[31] California Air Resources Board, 1993, CARB Identified Toxic Air Contaminants, available online at https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants, accessed March 26, 2020.

[32] Bay Area Air Quality Management District, 2018, Air Quality Standards and Attainment Status, available online at https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status, accessed March 26, 2020.

[33] City of Lafayette, 2002, General Plan, available online at https://www.lovelafayette.org/city-hall/city-departments/planning-building/general-master-specific-plans/general-plan, accessed October 15, 2020.

nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

Furthermore, BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO_x, PM_{10}, and $PM_{2.5}$. Development projects below the regional significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard, contribute substantially to an existing or projected air quality violation, or substantially contribute to health impacts. Where available, the significance criteria established by BAAQMD may be relied upon to make the following determinations.

a)

The BAAQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB to achieve National and California AAQS. In April 2017, BAAQMD adopted its 2017 Clean Air Plan, which is a regional and multiagency effort to reduce air pollution in the SFBAAB. Regional growth projections are used by BAAQMD to forecast future emission levels in the SFBAAB. For the Bay Area, these regional growth projections are provided by the Association of Bay Area Governments (ABAG) and transportation projections are provided by the Metropolitan Transportation Commission (MTC) and are partially based on land use designations in city/county general plans. Typically, only large, regionally significant projects have the potential to affect the regional growth projections.

The proposed project, a service/retail building and ancillary structures (e.g., outdoor gathering space, boardwalk, greenhouse, and amphitheater or outdoor movement space), would not be considered a regionally significant project under CEQA Guidelines Section 15206 that would affect regional vehicle miles traveled (VMT) and warrant intergovernmental review by ABAG and MTC. Due to the scope and nature of the project, it would not directly result in an increase in population or housing within the City or by regional planning efforts (*Plan Bay Area*) through 2040. It would not have the potential to substantially affect housing, employment, and population projections within the region, which is the basis of the 2017 Clean Air Plan projections. Furthermore, the proposed project would not generate additional emissions that would exceed the BAAQMD's emissions thresholds (see criterion (b) below). These thresholds were established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. The proposed project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. Therefore, the proposed project would not conflict with or obstruct implementation of the 2017 Clean Air Plan. Impacts would be *less than significant.*

b)

The following describes project-related impacts from regional short-term construction activities and regional long-term operation of the proposed project.

Regional Short-Term Construction Impacts

The entire SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.[34] Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on site would vary daily as construction activity levels change. Construction activities associated with the project would result in emissions of ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$. The BAAQMD construction criteria pollutant screening size for medical office projects is 277,000 square feet. The proposed project is substantially below the BAAQMD screening threshold and construction would thus generate nominal criteria air pollutant emissions. Therefore, a quantified analysis of the project's construction emissions would not be required, and impacts would be *less than significant*.

Regional Long-Term Operational Impacts

Typical long-term air pollutant emissions are generated by area sources (e.g., landscape fuel use, aerosols, architectural coatings, and asphalt pavement), energy use (natural gas), and mobile sources (i.e., on-road vehicles). Based on BAAQMD's screening criteria, medical office projects greater than 277,000 square feet would have the potential to generate a substantial increase in criteria air pollutants and would need further analysis. The proposed project would be below the BAAQMD screening threshold and would thus generate nominal GHG emissions (see also Table 4.3-1). Operational emissions generated by the project would not exceed the BAAQMD daily pounds per day or annual tons per year project level threshold.[35] Therefore, the proposed project would not cumulatively contribute to the nonattainment designations of the SFBAAB. Project-related operation activities to the regional air quality would be *less than significant*.

[34] Bay Area Air Quality Management District, Air Quality Standards and Attainment Status, http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status, accessed on November 17, 2020.

[35] Further details are shown in Appendix A, Air Quality and Greenhouse Gas Emissions, of this Initial Study.

TABLE 4.3-1 OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS ESTIMATES

	Criteria Air Pollutants (tons per year)[a]			
Category	ROG	NO_x	PM_{10}	$PM_{2.5}$
Proposed Project Annual Emissions				
Area	<1	<1	<1	<1
Energy	<1	<1	<1	<1
On-Road Mobile	<1	<1	<1	<1
Total	<1	<1	<1	<1
BAAQMD Annual Project-Level tons/yr Threshold	10	10	15	10
Exceeds BAAQMD's lbs/day Threshold?	No	No	No	No

	Criteria Air Pollutants (average pounds per day)			
Category	ROG	NO_x	PM_{10}	$PM_{2.5}$
Proposed Project Annual Emissions	1	1	1	<1
BAAQMD Average Daily Project-Level lbs/day Threshold	54	54	82	54
Exceeds BAAQMD's lbs/day Threshold?	No	No	No	No

Source: California Emissions Estimator Model (CalEEMod), Version 2016.3.2.25
Notes: Reactive Organic Gases = ROG; Nitrogen Oxides = NO_x; Coarse Inhalable Particulate Matter = PM_{10}; Fine Inhalable Particulate Matter = $PM_{2.5}$
a. Modeling assumes building area 12,009 square feet.

c)

Development that would be accommodated by the proposed project could expose sensitive receptors to elevated pollutant concentrations. Unlike the construction emissions shown above in Table 4.3-1 under criterion (b), described in pounds per day (PPD), localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects.

Construction Off-Site Community Risk and Hazards

Project construction would temporarily elevate concentrations of toxic air contaminants (TACs) and $PM_{2.5}$ in the vicinity of sensitive land uses during construction activities. However, development of the proposed project would not generate an intensive construction schedule or a substantial off-road equipment fleet that would result in significant construction impacts to off-site sensitive receptors. Furthermore, the nearest off-site sensitive receptors proximate to the project site are the single-family residences to the east of the project site and Contra Costa Jewish Day School to the northeast and would not be within 900 feet of construction activities on the project site. Therefore, construction-related health risk impacts associated with the project are considered *less than significant*.

Operation Phase Community Risk and Hazards

Types of land uses that typically generate substantial quantities of criteria air pollutants and TACs include industrial (stationary sources), manufacturing, and warehousing (truck idling) land uses. These types of major air pollutant emissions sources are not included as part of the proposed project. The proposed project would not include stationary sources that emit TACs and would not generate a significant amount

of heavy-duty truck trips (a source of diesel particulate matter [DPM]). Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation. Impacts would be *less than significant.*

CO Hotspot Analysis

Areas of vehicle congestion have the potential to create pockets of carbon monoxide (CO) called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 parts per million (ppm) or the 8-hour standard of 9 ppm. The proposed project would not conflict with the Contra Costa Transportation Authority's Congestion Management Program (CMP) because it would not hinder the capital improvements outlined in the CMP or alter regional travel patterns.[36] The CMP must be consistent with Metropolitan Transportation Commission's (MTC)/Association of Bay Area Governments' (ABAG) *Plan Bay Area*. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth in outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle VMT and associated GHG emissions reductions. While the proposed project would involve the construction of a new medical office building and associated structures, it would be consistent with the overall goals of the MTC/ABAG's *Plan Bay Area 2040* as it would serve the population surrounding the project site. Additionally, the project would not conflict with the CMP because it would not hinder the capital improvements outlined in Contra Costa County's 2019 CMP or alter regional travel patterns.

Furthermore, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact. Based on the traffic analysis conducted as part of this environmental analysis, the project would generate 25 AM peak hour trips and up to 60 PM peak hour trips during special events. Thus, the proposed project would not increase traffic volumes at affected intersections by more than BAAQMD's screening criteria of 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited.[37] The project would not have the potential to substantially increase CO hotspots at intersections in the project vicinity and impacts would be *less than significant.*

d)

Construction and operation of the proposed project would not generate odors that would affect a substantial number of people. The project would not be a facility that generates substantial odors that would affect a substantial number of people. The type of facilities that are typically considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy

[36] County of Contra Costa. 2019. 2019 Congestion Management Program for Contra Costa. https://www.ccta.net/wp-content/uploads/2019/09/Draft_CMP19_MainDoc.pdf. Accessed November 19, 2020.

[37] Bay Area Air Quality Management District (BAAQMD), 2011 Revised. California Environmental Quality Act Air Quality Guidelines.

farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. Medical office uses are not associated with foul odors that constitute a public nuisance.

During project-related construction activities on the project site, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Impacts would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

IV. BIOLOGICAL RESOURCES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plan, policies, or regulations, or by the California Department of Fish and Wildlife or 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, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	❒	❒	❒	■
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	❒	❒	■	❒
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?	❒	❒	■	❒
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?	❒	❒	❒	■

BACKGROUND AND METHODS

This section provides information on regulations that serve to protect sensitive biological resources, a description of the existing biological resources on the site, and an assessment of the potential impacts of implementing the Project. The assessment of potential impacts on biological resources involved a review of available background information for the Lafayette vicinity, including documentation prepared by the applicant's consultants, performing a habitat assessment of the project site to determine suitability of special-status animals and possible regulated waters, and systematic field surveys to confirm presence or absence of special-status plants and sensitive natural communities. Available background information included: the occurrence data of special-status species and sensitive natural communities maintained by the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW); wetlands mapped as part of the National Wetlands Inventory maintained by the U.S. Fish and Wildlife Service (USFWS); mapping of critical habitat for federally-listed species maintained by the USFWS; and reports prepared by the applicant's consulting arborist, Traverso Tree Service.[38]

[38] Traverso Tree Service, 2019, *Arborist Report for Cancer Support Community Center, APN 252-050-014*, September 6.

The field effort by the Initial Study biologist involved a field reconnaissance survey on March 24, 2020 to allow for an inspection of field conditions and potential for occurrence of sensitive biological and wetland resources. This was followed by systematic plant surveys on May 15 and July 7, 2020 to determine whether any sensitive resources are present on the site, review the adequacy of the Arborist Report prepared by the applicant's consulting arborist, and conduct a preliminary wetland assessment. Systematic surveys for special-status plant species and sensitive natural communities on the site were performed following the latest *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* of the CDFW.[39] A list of special-status plant species suspected to possibly occur in the Lafayette vicinity was prepared based on a review of the CNDDB, the electronic inventory of rare and endangered plants maintained by the California Native Plant Society (CNPS), and other information sources. This list of suspected 69 special-status plant species is contained in Appendix B of this Initial Study and provides information on preferred habitat, flowering period and other characteristics that allowed for a determination on when to perform the field surveys. All plants encountered during the systematic surveys were identified to the degree necessary to determine possible rarity. A list of plant species encountered on the site is contained in Appendix B of this Initial Study.

ENVIRONMENTAL SETTING

Existing Conditions

Vegetation and Wildlife Habitat

The project site is located on the north-facing slopes in western Lafayette, with elevations ranging from 370 feet at the northeast corner to approximately 505 feet along the southern property line. Vegetation on the project site is composed of a mosaic of grasslands, woodland, and scrub. An ephemeral drainage borders the western edge of the site, originating on the steep hillside in the southwestern corner of the site, heading northwesterly, and flowing into a culvert system under Mt. Diablo Boulevard. The relative value and wildlife species typically associated with each of the habitat types found on the project site is summarized below.

Grasslands

Grasslands dominate the lower elevations of the project site and extend into the woodland understory. Grassland cover is dominated by non-native grasses and forbs, but scattered native species are present as well. Dominant non-native species include: wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), bull thistle (*Cirsium vulgare*), broad leaf filaree (*Erodium botrys*), woodland geranium (*Geranium molle*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and bur clover (*Medicago polymorpha*), among others. Native grasses and forbs are scattered throughout the grasslands, including blue wild rye (*Elymus glaucus*), Torrey's melic (*Melica torreyana*), foothill needle grass (*Stipa lepida*), soap plant (*Chlorogalum pomeridianum*), sticky cinquefoil *(Drymocallis glandulosa* var. *glandulosa*), California

[39] California Department of Fish and Wildlife, 2009, *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*, November 24.

poppy (*Eschscholzia californica*), blue-eyed grass (*Sisyrinchium bellum*), and Ithuriel spear (*Triteleia laxa*), among others. The native component does not occur in high enough density or aerial extent to be considered a distinct sensitive natural community type, as discussed further below.

Grasslands support a variety of mammals, birds, and reptiles, and provide foraging habitat for raptors and other predatory species. Many species use the grassland for only part of their habitat requirements, foraging in the grassland and seeking cover in the surrounding tree and scrub cover. Common species found in grassland cover include: western fence lizard, northern alligator lizard, gopher snake, goldfinch, western meadowlark, brown towhee, sparrows, California vole, and Bottae's pocket gopher. Black-tailed deer forage on perennial forbs and the foliage of shrubs and sapling trees encroaching into the grasslands. Rodent, bird, and reptile populations offer foraging opportunities for avian and mammalian predators such as white-tailed kite, American kestrel, red-tailed hawk, great horned owl, gray fox, bobcat, coyote, and occasionally mountain lion.

Oak/Bay Woodland

Native coast live oak (*Quercus agrifolia*), valley oak (*Q. lobata*), black oak (*Q. kelloggii*) and California bay (*Umbellularia californica*) form woodlands over half the project site. Valley oak and coast live oak are the most abundant tree species. The understory in the woodlands varies, with some locations supporting grassland species where the canopy is open. Where the tree cover is dense, understory species are typically sparse, consisting of poison oak (*Toxicodendron diversilobum*), California polypody (*Polypodium californicum*), and scattered shrubs such as toyon (*Heteromeles arbutifolia*), coyote brush (*Baccharis pilularis*), goldenback fern (*Pentagramma triangularis*), chickweed (Stellaria media), and common snowberry (*Symphoricarpos albus* var. *laevigatus*).

As described below, Chapter 6-17 of the Municipal Code, Tree Protection, serves to regulate the removal of trees within Lafayette. As defined by the Code, protected trees include both native and non-native species, with a particular emphasis on native riparian trees with trunk diameters over six inches and other native trees outside riparian corridors with trunk diameters of 12 inches or greater. On undeveloped land, all trees with trunk diameters of six inches or greater are regulated, as is any tree designated for preservation as part of an approved development application. In accordance with the Municipal Code requirements, a tree removal permit is typically required before any regulated tree can be removed. Additional information on the Tree Protection Ordinance under "Local Regulations" below. The oaks, bays, and other trees provide foraging, roosting, and possibly nesting opportunities for birds and mammals. Wildlife commonly associated with woodland habitat include: woodpeckers, western flycatcher, chestnut-backed chickadee, plain titmouse, Hutton vireo, orange-crowned kinglet, rufous-sided towhee, northern flicker, banded-tailed pigeon, bushtit, ringneck snake, ensatina, California slender salamander, and possibly several species of bats. Black-tailed deer forage on the abundance seed crops in the fall, and numerous deer trails and signs of bedding were observed during surveys of the project site. A number of stick nests of San Francisco dusky-footed woodrat, a California Species of Special Concern, were observed along the eastern edge of the project site.

Wetlands

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions.

The CDFW, U.S. Army Corps of Engineers (Corps), and California Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to wetlands and other "waters of the United States." Jurisdiction of the Corps is established through provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material without a permit. The RWQCB jurisdiction is established through Section 401 of the Clean Water Act, which requires certification or waiver to control discharges in water quality, and the State Porter-Cologne Act. Jurisdictional authority of the CDFW over wetland areas is established under Sections 1600-1607 of the State Fish and Game Code, which pertain to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream.

Based on the results of the preliminary wetland assessment performed as part of the surveys of the project site, jurisdictional waters are limited to an ephemeral drainage along the western edge of the site. The drainage doesn't have an actively eroded bed and bank along most of the alignment on the project site, and wetland vegetation is generally absent. However, the drainage most likely qualifies as a State Waters regulated by the CDFW and RWQCB. The State waters regulated by CDFW and RWQCB extend to the top of bank where woody riparian vegetation is absent, as is generally the case on the project site. Recent changes in federal waters may exclude this feature from Corps jurisdiction under Section 404 of the Clean Water Act. Authorization is typically required from regulatory agencies before any modifications to jurisdictional waters is allowed.

Special-Status Species

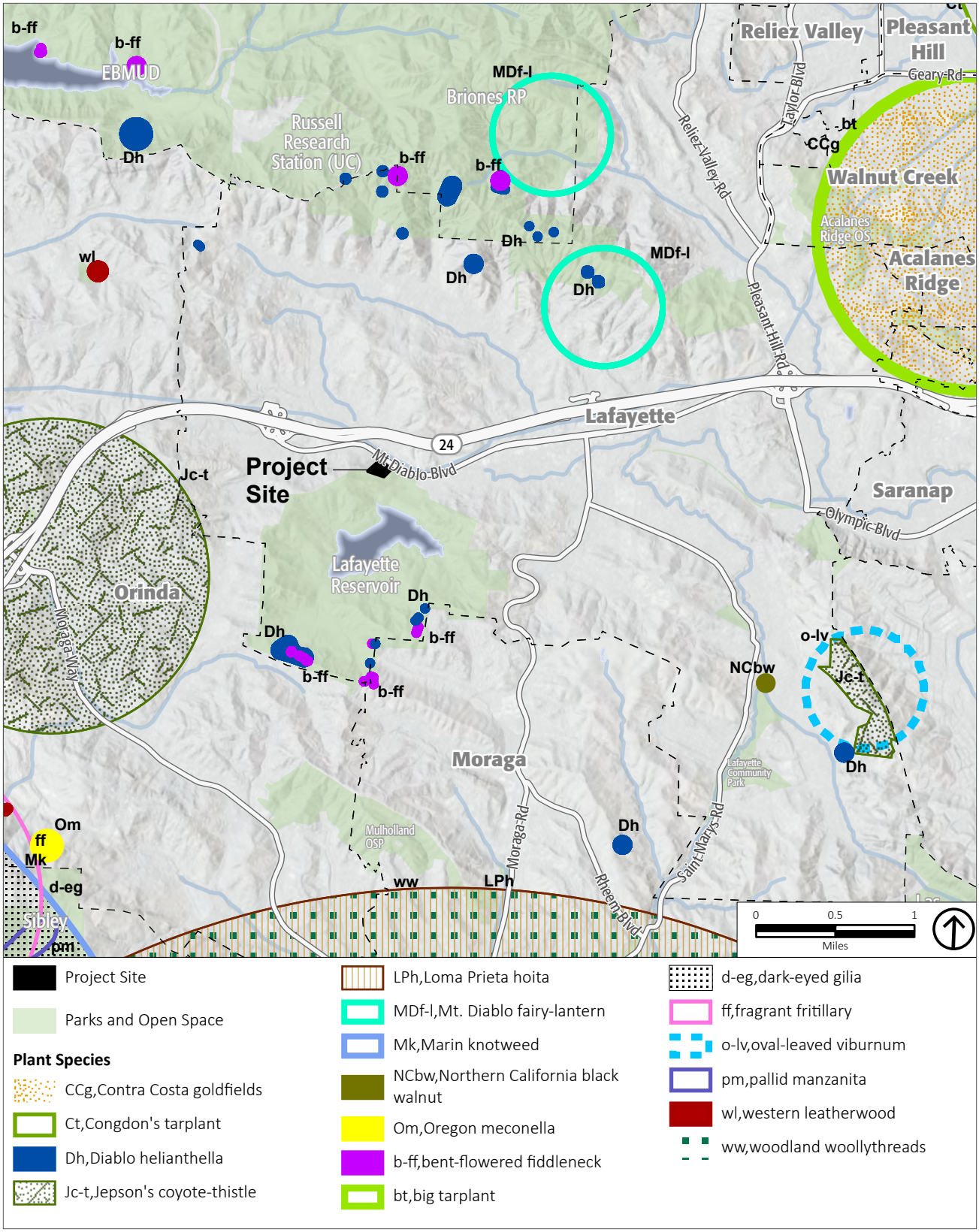
Special-status species are plants and animals that are legally protected under the State of California and/or federal Endangered Species Acts[40] or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species with legal protection under the Endangered Species Acts often represent major constraints to development, particularly when the species are wide-

[40] The federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of the FESA and pertains to native California species.

ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"[41] of these species.

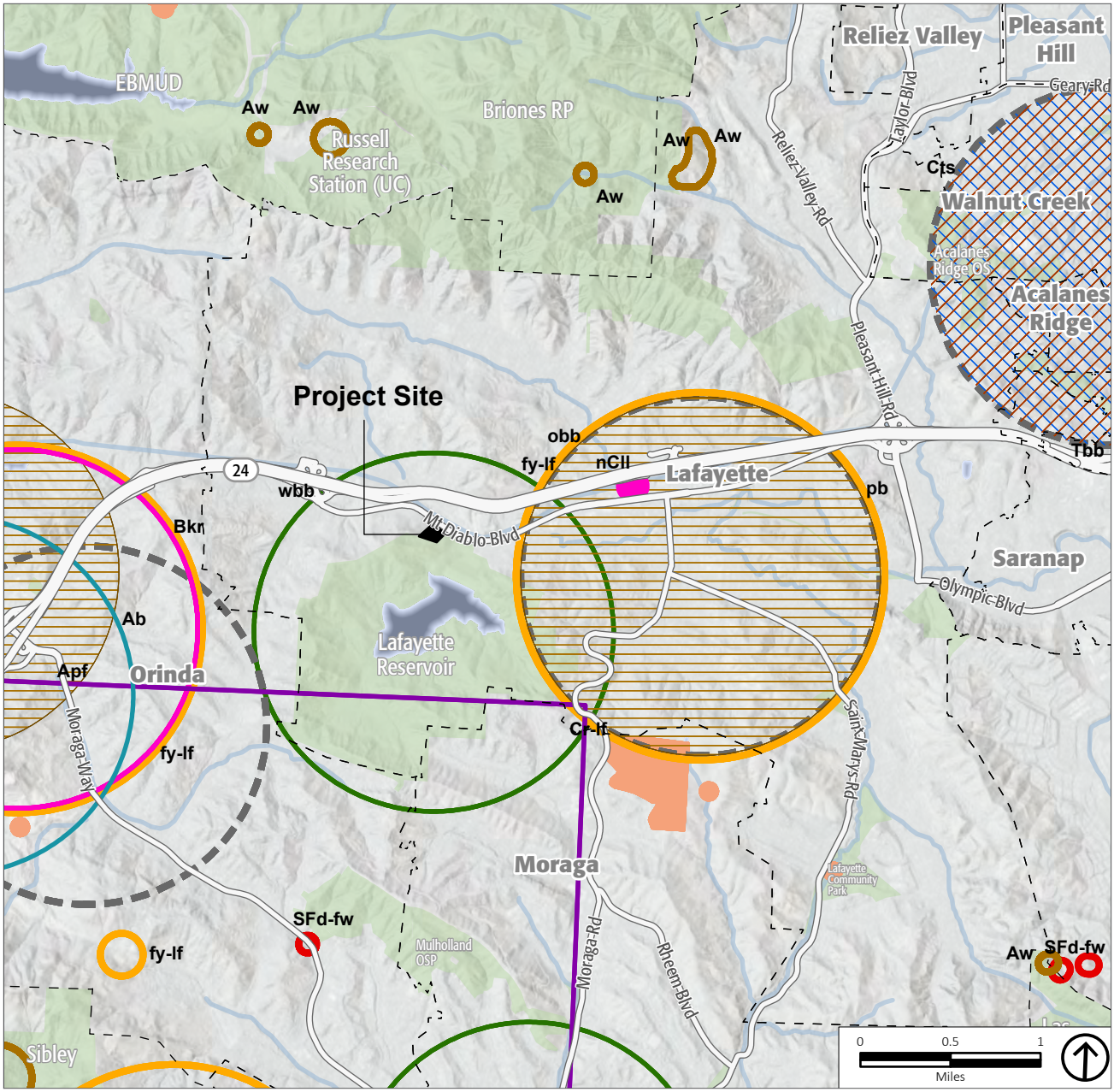
A record search conducted by the CNDDB, together with other relevant information, indicates that occurrences of numerous plant and animal species with special status have been recorded or are suspected to occur in central Contra Costa County and the Lafayette vicinity. Figure 4.4-1 shows the distribution of known occurrences of special-status plants, Figure 4.4-2 the special-status animal species, and Figure 4.4-3 the designated critical habitat units in the surrounding area as mapped by the CNDDB and USFWS. separates the project site from the closest designated critical habitat about one mile to the north. Critical habitat is a term in the Endangered Species Act for areas designated by the USFWS that have features essential for the conservation of a threatened or endangered species and which may require special management considerations. Below is a summary of the special-status plant and animal species known from central Contra Costa County and Lafayette vicinity, and conclusions regarding presence or absence on the project site.

[41] "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The CDFW also considers the loss of listed species habitat as take, although this policy lacks statutory authority and case law support under the CESA.



Source: PlaceWorks, 2020.

Figure 4.4-1
Special-Status Plant Species



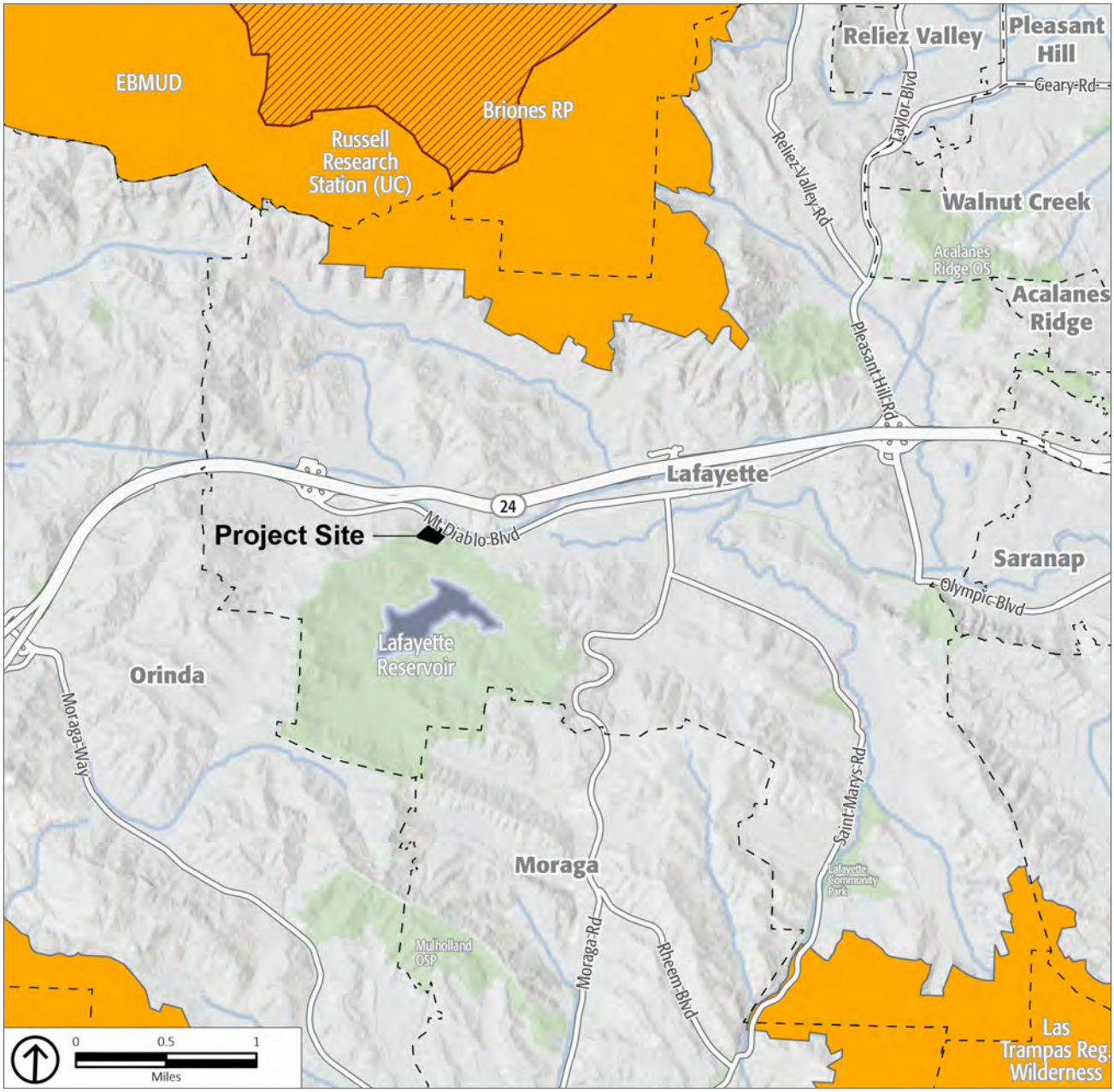
Source: PlaceWorks, 2020.

- Project Site
- Parks and Open Space

Animal Species

- Ab,American badger
- Apf,American peregrine falcon
- Aw,Alameda whipsnake
- Bkr,Berkeley kangaroo rat
- Cts,California tiger salamander
- SFd-fw,San Francisco dusky-footed woodrat
- Tbb,Townsend's big-eared bat
- fy-lf,foothill yellow-legged frog
- nCll,northern California legless lizard
- obb,obscure bumble bee
- pb,pallid bat
- wbb,western bumble bee
- Cr-lf,California red-legged frog

Figure 4.4-2
Special-Status Animal Species



Source: PlaceWorks, 2020.

Project Site

Parks and Open Space

Critical Habitat

California red-legged frog

Alameda whipsnake (=striped racer)

Figure 4.4-3

USFWS Designated Critical Habitat

Plant Species

A number of plant species with special status have been reported in the vicinity of the project site, and based on recorded geographic range and preferred habitat, numerous other species may potentially occur in central Contra Costa County. As indicated in Figure 4.4-1, 17 species have been reported by the CNDDB within about 3 miles of the project site. These consist of bent-flowered fiddleneck (*Amsinckia lunaris*), big tarplant (*Blepharizonia plumosa*), Congdon's tarplant (*Centromadia parryi* var. *congdonii*), Contra Costa goldfields (*Lasthenia conjugens*), dark-eyed gilia (*Gilia millefoliata*), Diablo helianthella (*Helianthella castanea*), fragrant frittilary (*Fritillaria liliacea*), Jepson's coyote-thistle (*Eryngium jepsonii*), Loma Prieta hoita (*Hoita strobilina*), Marin knotweed (*Polygonum marinense*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), northern California black walnut (*Juglans hindsii*), Oregon monardella (*Monardella antonina* ssp. *antonina*), oval-leaved viburnum (*Viburnum ellipticum*), pallid manzanita (*Arctostaphylos pallida*), western leatherwood (*Dirca occidentalis*), and woodland woolythreads (*Monolopia gracilens*). The list of the 69 special-status plant species suspected from the Lafayette vicinity contained in Appendix B (Table B.1) provides additional information on the status and typical habitat characteristics for each of these 17 species.

As described above, systematic surveys were conducted to determine whether any special-status plant species are present on the project site. Detailed surveys were conducted on May 15 and July 7, 2020 inspecting all plants encountered and identifying them to the degree necessary to determine possible rarity. A list of plant species encountered on the project site is contained in Appendix B (Table B.2). No special-status plant species were encountered during the surveys or are believed to be present on the project site.

Animal Species

A number of bird, mammal, reptile, fish, and invertebrate species with special status are known or suspected to possibly occur in the central Contra Costa County vicinity. Figure 4.4-2 shows the distribution of the 13 special-status species animal species within about 3 miles of the project site, based on records maintained by the CNDDB. These include: Alameda whipsnake (*Masticophis lateralis euryxanthus*), American badger (*Taxidea taxus*), Berkeley kangaroo rat (*Dipodemys hermanni berkeleyenis*), California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), foothill yellow-legged frog (*Rana boylii*). northern California legless lizard (*Anniella pulchra*), American peregrine falcon (*Falco peregrinus anatum*), pallid bat (*Antrozous pallidus*), San Francisco dusky-footed woodrat (*Neotomes fuscipes annectens*), Townsend's big-eared bat (*Placates townsendi townsendi*), obscure bumble bee (*Bombus caliginosus*), and western bumble bee (*Bombus occidentalis*). Many other special-status species are known or suspected to occur in the Lafayette vicinity, but are not closely monitored by the CNDDB. The list of the 34 special-status animal species known or suspected from the Lafayette vicinity contained in Appendix B (Table B.3) provides additional information on the status and typical habitat characteristics for each of these 13 species. The following provides a summary of those special-status animal species

considered to have the highest potential for occurrence in the Lafayette vicinity and conclusion with regard to presence or absence on the project site.

Amphibians and Reptiles

Most of the special-status amphibian and reptile species known from the surrounding region are dependent on aquatic habitat not found on both the project site or surrounding area, including California tiger salamander, California red-legged frog, western pond turtle (*Clemmys marmorata*), and foothill yellow-legged frog. Similarly, suitable habitat for northern California legless lizard is also marginal or absent from the project site due to a lack of suitable substrate.

The range of the federally and State-threatened Alameda whipsnake is restricted to the inner Coast Range in western and central Contra Costa and Alameda Counties. Typical habitat characteristics for Alameda whipsnake consists of stands of chaparral and scrub habitat that contain abundant prey species such as western fence lizard, with abundant areas for sunning and other behaviors. This subspecies is known to utilize adjacent areas of grassland, woodland and riparian habitats, but chaparral and scrub habitats are essential for occupation in an area. The project site does not contain primary constituent elements for Alameda whipsnake, given the lack of chaparral and large stands of scrub habitat. The project site is also located in an area where past occurrences of Alameda whipsnake has not been reported and the extent of urban development precludes the potential for dispersal into the site vicinity in the future. Figure 4.4-3 shows how Highway 24 and residential development have created impediments to continuous range for this species.

Birds

Most of the special-status animal species known or suspected to occur in the site vicinity are bird species which may forage and possibly nest where suitable nesting substrate is present. These include: Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), western burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus caeruleus*), California horned lark (*Eremophila alpestris actia*), prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), and yellow warbler (*Dendroica petechia*). Golden eagle, northern harrier, yellow warbler, California horned lark, and loggerhead shrike are considered California SSC by the CDFW.[42] White-tailed kite and golden eagle are fully protected species, and golden eagle is also protected under the federal Bald Eagle Protection Act. The other species are monitored to varying degrees by the CNDDB, focusing on nest locations. Some were previously considered California SSC by the CDFW but have been removed from this list as new data indicates they are more abundant than previously believed.

[42] "California Species of Special Concern" (SSC) have no legal protective status under the California Endangered Species Act but are of concern to the CDFW because of severe decline in breeding populations and other factors.

Suitable nesting habitat is generally absent for American peregrine falcon, golden eagle, and prairie falcon on the project site, due to the absence of cliffs and other nesting substrate and the intensity of human activity in the area, but these species may occasionally forage in the grasslands and open woodlands in the site vicinity. Similarly, the absence of ground squirrels on the project site limits its suitability for nesting by western burrowing owl. Potentially suitable habitat for the remaining species, and other more common bird species is present in the areas of woodland vegetation, scattered trees, and dense brush. More common raptors such as the great-horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*) may nest in mature trees on the project site and vicinity, as well as the potential for nesting by more common bird species.

Nests of native bird species are protected under the Migratory Bird Treaty Act (MBTA) when in active use, and nests of raptors (birds-of-prey) are also protected under State Fish and Game Code when in active use. No nesting locations have been identified by the CNDDB for special-status bird species in the site vicinity or were observed during the field surveys of the project site. No evidence of any nesting activity was detected and none of these species were observed during field surveys of the project site. However, there remains a potential for new nests to be established in the future. Preconstruction surveys are typically preformed to avoid disturbance or inadvertent abandonment of nests in active use when vegetation removal or construction is to be initiated during the nesting season (typically from February 1 through August 31).

Mammals

A number of special-status animal species are known or suspected from the region, including San Francisco dusky-footed woodrat, several bat species, American badger, and mountain lion (*Puma concolor*). As indicated in Figure 4.4-2, occurrences of pallid bat and Townsend's western big-eared bat have been reported from the Lafayette vicinity by the CNDDB, and other bat species such as hoary bat (*Lasiurus cinereus*) are known from the central Contra Costa County area. Pallid and Townsend's western big-eared bat are considered California SSC by the CDFW. Roost locations of hoary bat and other bat species on the *Special Animals List*[43] maintained by the CDFW are infrequently monitored by the CNDDB. Suitable habitat varies for each species, but roosting locations can include trees, tree cavities, abandoned or little used buildings, caves, mines, and cliff faces. No bats or evidence of bat occupation was observed during field surveys of the site, but individuals could occupy cavities in some of the larger trees, or could establish roosts in advance of construction.

The San Francisco dusky-footed woodrat is considered a California SSC by the CDFW. It is a year-round resident in the San Francisco Bay area, preferring scrub and wooded areas, and feeds primarily on nuts, fruits, fungi, foliage, and forbs. It typically builds large terrestrial stick nests that range from 2 to 5 feet in height and can be up to 8 feet in basal diameter. These nests are usually placed on the ground or against a log or tree and are often within dense brush. A number of characteristic stick nests of this species were observed along the eastern boundary of the project site, but appear to be satellite nests given their

[43] California Department of Fish and Wildlife, California Natural Diversity Data Base, 2020, *Special Animals List*, January.

relatively small size. Areas of dense scrub in the woodland understory at the upper limits of the project site provide suitable habitat for this species.

Several other special-status mammal species have varying potentials for occurrence on the project site. Mountain lion is fully protected under State Fish and Game code. It is known to forage and disperse through the open space and undeveloped lands in the vicinity, and most likely forages and moves across the project site and surrounding areas. But suitable denning locations for mountain lion are absent from the project site. Similarly, American badger may occasionally forage through the grasslands and open woodlands in the site vicinity, but no evidence of dens or diggings by this species were observed during the field surveys of the project site. Other mammal species known or suspected from the region are not believed to occur on the project site because of the absence of suitable habitat and distance from known occupied habitat. This includes: San Joaquin kit fox (*Vulpes macrotis mutica*), Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*), which is Critically Endangered[44], and ringtail (*Bassaricus astutus*).

Fish and *Invertebrates*

Suitable habitat for the fish and invertebrate species reported by the CNDDB from the Lafayette vicinity is generally low to absent from the project site. Suitable aquatic habitat for special-status fish such as steelhead (*Oncorhynchus mykiss*) and coho salmon (*Oncorhynchus tshawytsha*) is absent from the project site. Western bumblebee (*Bombus occidentalis*) and obscure bumblebee (*Bombus caliginosus*), which have been reported from the Lafayette vicinity and are found in a variety of habitats, technically do not have any legal protective status under the State or federal Endangered Species Acts, but records on their distribution in the western United States are now being more closely monitored by the CNDDB and other data bases because of a dramatic decline in numbers and distribution over the past two decades. Their presence on the project site, either foraging or nesting, would not be considered a significant constraint.

Bridges' coast range shoulderband snail (*Helminthoglypta nickliniana bridgesii*) is typically found in moist, often riparian areas under rocks, logs, and woody debris and duff.[45] This subspecies has no legal protective status under the State and/or federal ESAs but was formerly a candidate for federal listing and therefore has been monitored by the CNDDB. However, suitable habitat conditions are absent from the project site. Inspection under logs, rocks and duff on the project site found no shoulderband snails during field surveys of the project site and none are believed to be present.

Sensitive Natural Communities

Sensitive natural communities are natural community types considered to have a high inventory priority with the CNDDB because of their rarity. Sensitive natural community types are monitored by the CNDDB due to their continuing loss as a result of conversion to urban and agricultural development, flood control improvements, and other habitat modifications. CDFW ranks natural communities (also referred to by

[44] https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=180239#null
[45] *Debris* and *duff* is the decaying vegetable matter on the forest and woodland floor.

CDFW as alliances) based on rarity rank, using a system derived from NatureServe's standard heritage program, as indicated in the *List of California Vegetation Alliances.*[46]

Based on the inspections conducted as part of the systematic surveys, sensitive natural community types are absent on the project site. Native grasses and forbs are part of the grassland cover, but do not have the density or aerial extent typically considered necessary by the CDFW for them to qualify as a native grassland. Riparian vegetation is absent along the ephemeral drainage along the western boundary of the project site and the mixed oak woodlands are relatively common through the inner coast range, although native trees are considered an important resource by the City of Lafayette as described below.

Local Regulations

This section describes the key policy documents and regulations that are applicable to the proposed project. Specifically, this section summarizes the relevant goals and polices in the Open Space and Conservation Element of the Lafayette General Plan, together with a discussion of Chapter 6-17 of the Municipal Code related to Tree Protection.

Lafayette General Plan

The Lafayette General Plan provides a comprehensive long-term plan for the physical development of the city. Biological and water resources are addressed in the Open Space and Conservation Element, which contains goals and policies related to preservation of areas with important biotic resources such as riparian habitat, ridgelines, woodlands, creeks, streams, and other watercourses. This Element also addresses improving water quality in watercourses, and preserving soil as a natural resource. The goals and policies most relevant to the Revised Project are listed in Table 4.4-1.[47]

[46] California Department of Fish and Wildlife, Biogeographic Data Branch, Vegetation Classification and Mapping Program, 2020, *California Natural Community List*.

[47] City of Lafayette, 2002, General Plan, available online at https://www.lovelafayette.org/city-hall/city-departments/planning-building/general-master-specific-plans/general-plan, accessed October 15, 2020.

TABLE 4.4-1 LAFAYETTE GENERAL PLAN POLICIES AND PROGRAMS PERTAINING TO BIOLOGICAL RESOURCES

Policy/ Implementation Program Number	Policy/Program Text
▪ Chapter III: Open Space and Conservation	
▪ Policy OS-1.3	Protect areas of special ecological significance, including ridges, hillsides, woodlands, wildlife corridors, riparian areas, steep slopes, prominent knolls, swales, and rock outcroppings.
▪ Program OS-1.3.1	Protect areas of special ecological significance through the use of open space, scenic and conservation easements as conditions of development approval.
▪ Policy OS-1.6	Assemble open space areas from contiguous parcels to provide continuous scenic and wildlife corridors wherever feasible.
▪ Policy OS-1.7	Assure that adequate open space is provided to permit effective wildlife corridors for animal movement between open space areas, along watercourses, and on ridges.
▪ Policy OS-3.1	The character and natural features of hills, steep slopes, riparian areas, woodlands, and open areas will be preserved in as natural a condition as feasible.
▪ *Goal OS-4*	*Preserve areas with important biotic resources.*
▪ Policy OS-4.1	Preserve, protect, and restore riparian habitat, particularly the native, riparian woodland species and associated understory plants.
▪ Policy OS-4.2	Protect native vegetation along ridgelines.
▪ Policy OS-4.3	Preserve existing woodlands and their associated vegetation.
▪ Policy OS-4.4	Protect important groves of trees and significant existing vegetation. Encourage the planting of native, drought-tolerant, and fire-resistant species, as well as the planting of herbaceous species that have a high wildlife value. Avoid the cutting of mature trees.
▪ Policy OS-4.5	Require a biotic resource analysis prior to development of properties located within, or adjacent to, identified environmentally sensitive areas.
▪ *Goal OS-5*	*Preserve and protect creeks, streams, and other watercourses in their natural state.*
▪ Policy OS-5.1	Protect stream bank stability.
▪ Policy OS-5.2	Provide opportunities for visual and educational access to natural creeks and riparian areas along public right-of-way, where feasible.
▪ Policy OS-6.1	Minimize pollutants in storm water runoff.

Source: City of Lafayette, 2002, City of Lafayette General Plan.

Lafayette Municipal Code Tree Protection Regulations

Chapter 6-17 of the Municipal Code pertains to tree protection. Subsection 6-1702(m) defines "protected tree" to include any tree on public or private property meeting one or more of the following six standards:

- Is a native coast live oak, canyon oak, blue oak, white oak, black oak, valley oak, interior live oak, California bay, California buckeye, and madrone with a trunk diameter of 12 inches or more measured at 4.5 feet above grade.
- Is a native riparian bigleaf maple, boxelder, California buckeye, white alder, black walnut, cottonwood, red willow, arroyo willow, coast live oak, valley oak, or California bay tree with a

trunk diameter of 6 inches or more or has a multi-trunk with a diameter of 4 inches or more measured at 4.5 feet above grade.
- Is of any size or species and designated to be protected and preserved as part of an approved development application.
- Is of any species with a diameter of 6 inches or more measured at 4.5 feet above grade and located on an undeveloped property.
- Is a replacement tree planted as restitution for a violation of this chapter.
- Is a native tree of any size or species within a restricted ridgeline area.

It is a violation to destroy a protected tree without a category I or category II permit, or as allowed under exceptions to the ordinance. A category I permit is required to remove a protected tree on property not currently associated with a development application, and a category II permit applies to proposed removal on property associated with a development application. Both permit types allow for reasonable replacement as a condition, with replacement ratios defined in subsection 6-1707(G) Generally for each 6 inches or its fraction of the diameter of the tree to be removed, two 15-gallon trees are to be planted as replacement. Larger replacement trees may be required, or may be substituted at lower replacement ratios defined in subsection 6-1707(G)2 as determined by the City. An in-lieu payment of an amount set by resolution of the City Council may be paid if the property cannot accommodate replacement plantings.

DISCUSSION

a)

The proposed project has the potential to adversely affect nesting birds, roosting bats, and nests of San Francisco dusky-footed woodrat. Tree and vegetation removal may result in inadvertent loss of individuals which would be a potentially significant impact unless adequate preconstruction surveys and avoidance are conducted in advance of initiating project construction, as discussed further below.

No special-status plant species or essential habitat for other special-status animal species occurs on the project site. This includes absence of essential habitat or future dispersal opportunities for Alameda whipsnake, California red-legged frog, foothill yellow-legged frog, California tiger salamander, western pond turtle, and other special-status animal species known or suspected from the Lafayette vicinity, and no adverse impacts on these species is anticipated.

Nesting Birds

Although no evidence of active nests was encountered during field surveys of the project site, new nests could be established in advance of proposed construction. If new nests are established in advance of initiating project construction, new nests in active use could be vulnerable to loss or disturbance as trees and other vegetation are removed to accommodate construction of the new building, roadways, and other improvements. Construction in close proximity of nests in active use could lead to nest abandonment, unless appropriate seasonal restrictions are implemented. Destruction of bird nests in active use or activities that could lead to nest abandonment would be a violation of the Migratory Bird Treaty Act and State Fish and Game Code, and would be a *potentially significant* impact.

A standard method to address the potential for nesting birds is either to initiate construction during the non-nesting season, which in Contra Costa County is typically from September 1 to February 28, or to conduct a nesting survey within 7 days prior to initial tree removal and construction to determine whether any active nests are present that must be protected until any young have fledged and are no longer dependent on the nest. Protection of the nests, if present, would require that construction setbacks be provided during the nesting and fledging period, with the setback depending on the type of bird species, degree to which the individuals have already acclimated to other ongoing disturbance, and other factors. Without these controls, the new building and other improvements on the project site could adversely affect nesting birds would be a *potentially significant* impact.

Significance Without Mitigation: Potentially Significant.

Mitigation Measure BIO-1a: Adequate measures shall be taken to avoid inadvertent take of bird nests protected under the federal Migratory Bird Treaty Act and Department of Fish and Game Code when in active use. This shall be accomplished by taking the following steps.

- If tree removal and initial construction is proposed during the nesting season (March 1 to August 31), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 7 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within 100 feet of proposed construction. The project site shall be resurveyed to confirm that no new nests have been established if vegetation removal and demolition has not been completed or if construction has been delayed or curtailed for more than 7 days during the nesting season.
- If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to February 28), tree and vegetation removal and building construction may proceed with no restrictions.
- If bird nests are found, an adequate setback shall be established around the nest location and vegetation removal, building demolition, and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the CDFW, and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the project site.
- A report of findings shall be prepared by the qualified biologist and submitted to the City for review and approval prior to initiation of vegetation removal, building demolition and other construction during the nesting season (March 1 to August 31). The report shall either confirm absence of any active nests or should confirm that any young are located within a designated no-disturbance zone and construction can proceed. No report of findings is required if vegetation removal and other construction is initiated during the non-nesting season (September 1 to February 28) and continues uninterrupted according to the above criteria.

Mitigation Measure BIO-1a would serve to address any potential adverse impacts on possible nesting birds on the project site. Consequently, future development on the project site would avoid or fully mitigate potential adverse effects and potential impacts would be *less than significant with mitigation*.

Significance With Mitigation: Less than significant.

Special-Status Bat Species

Trees on the project site could provide roosting habitat for a number of special-status bat species, including: pallid bat, Townsend's western big-eared bat, and hoary bat. Tree removal and construction disturbance as part of building and roadway construction in the immediate vicinity of an active bat roost could affect special-status bats and other more common bats, if present. Direct impacts on bats could occur if construction activities resulted in direct mortality or the disruption or abandonment of an active bat roost(s). Anticipated impacts on bat foraging and movement opportunities would be minimal, however, given that construction would presumably be limited to a relatively small portion of the project site and would not result in the conversion of large areas of natural habitat.

A standard method to address the potential for roosting bats is to conduct a roosting survey within 7 days prior to initial tree removal and construction to determine whether any active roosts are present that must be protected until any young have fledged and are no longer dependent on the roost. Protection of the roost, if present, would require that construction setbacks be provided, with the setback depending on the type of bat species, degree to which the individuals have acclimated to ongoing disturbance, and other factors. Without these controls, the new building and other improvements on the project site could adversely affect roosting bats would be a *potentially significant* impact.

Significance Without Mitigation: Potentially Significant.

Mitigation Measure BIO-1b. Adequate measures shall be taken to avoid inadvertent take of special-status bat species if present in trees on the project site. This shall be accomplished by taking the following steps.

- A qualified biologist shall visually inspect trees to be removed for bat roosts within 7 days prior to their removal. The biologist shall look for signs of bats including sightings of live or dead bats, bat calls or squeaking, the smell of bats, bat droppings, grease stains or urine stains around openings in trees, or flies around such openings. Trees with multiple hollows, crevices, forked branches, woodpecker holes, or loose and flaking bark have the highest chance of occupation and shall be inspected the most carefully.
- If signs of bats are detected, confirmation on presence or absence shall be determined by the qualified biologist, which may include night emergency or acoustic surveys.
- Due to restrictions of the California Health Department, direct contact by workers with any bat is not allowed. The qualified bat biologist shall be contacted immediately if a bat roost is discovered during project construction.
- If an active maternity roost is encountered during the maternity season (April 15 to August 31), the CDFW shall be contacted for direction on how to proceed and an appropriate exclusion zone established around the occupied tree until young bats are old enough to leave the roost without jeopardy. The size of the buffer would take into account:
    - Proximity and noise level of project activities;
    - Distance and amount of vegetation or screening between the roost and construction activities; and

- Species-specific needs, if known, such as sensitivity to disturbance.

Mitigation Measure BIO-1b would serve to address any potential adverse impacts on special-status bat species on the project site. Consequently, future development on the project site would avoid or fully mitigate potential adverse effects and potential impacts would be *less than significant with mitigation*.

Significance With Mitigation: Less than significant.

San Francisco Dusky-Foot Woodrat

The woodlands with understory shrubs on the project site provide suitable habitat for San Francisco dusky-footed woodrat, and several woodrat nests were observed along the eastern boundary. Woodrat nests and suitable woodrat habitat could be damaged or destroyed during construction if nests are present in the immediate vicinity of grading for the new building and other improvements. Although the likelihood of disturbance to woodrat nests appears low given their presence near the eastern edge of the project site, additional preconstruction surveys would be necessary to confirm that no new nests have been built by woodrats in advance of initial vegetation removal and construction. Without these controls, this would be a *potentially significant* impact on San Francisco dusky-footed woodrat.

Significance Without Mitigation: Potentially Significant.

Mitigation Measure BIO-1c: Adequate measures shall be taken to avoid inadvertent take of San Francisco dusky-footed woodrats on the project site. This shall be accomplished by taking the following steps.

- A qualified biologist shall be retained to conduct a preconstruction survey for San Francisco dusky-footed woodrats, to determine whether any stick nests in the vicinity of proposed vegetation removal and development. The survey shall be performed within 30 days prior to vegetation removal and grading.
- If any nests are encountered within the limits of proposed grading and development, a trapping and relocation effort shall be conducted outside the breeding season (March 1 through August 31) to ensure any young are not inadvertently lost due to the destruction of the protective nest.
- Any nests within the construction zone shall be relocated to locations retained as undeveloped open space on the project site, and individual woodrats released into their relocated nests. The trapping and relocation effort shall be performed by a qualified biologist following coordination with the CDFW, and preferably be conducted within 7 days prior to grubbing and vegetation removal to prevent individual woodrats from moving back into the construction zone.

Mitigation Measure BIO-1c would serve to address any potential adverse impacts on San Francisco dusky-footed woodrat on the project site. Consequently, future development on the project site would avoid or fully mitigate potential adverse effects and potential impacts would be less than significant with mitigation.

Significance With Mitigation: Less than significant.

b)

No riparian habitat, native grasslands, or other sensitive natural community types are present on the project site. No adverse impacts are anticipated, and no mitigation is necessary.

c)

The proposed project would avoid the ephemeral drainage along the western edge of the site. As indicated in Figure 3-17 the limits of grading and improvements would avoid the top of bank at the closest point where the proposed driveway parallels the drainage and trees growing along the bank would be retained. Appropriate best management practices would be implemented during construction to prevent erosion and sedimentation that could otherwise enter the drainage and eventually be discharged downstream into Lafayette Creek, as discussed in Section X, Hydrology and Water Quality. With these standard controls, jurisdictional waters would be adequately avoided, potential impacts would be *less than significant*, and no mitigation is required.

d)

The proposed project would not have any significant adverse impacts on wildlife movement opportunities or adversely affect native wildlife nursery sites. Wildlife in the vicinity of the site are already acclimated to human activity, and construction-related disturbance would not cause any significant impacts on common wildlife species found in the area. Some common species could be eliminated or displaced from the site during construction, but these are not special-status species and their loss or displacement would not be considered a significant impact. Pre-construction surveys recommended in Mitigation Measures BIO-1a through 1c would ensure avoidance of any nesting birds, roosting bats, and woodrat nests if present within the limits of disturbance. Wildlife species would continue to utilize the remaining available habitat on the site, using the remaining trees and grasslands for foraging, roosting, and other activities. No substantial disruption of movement corridors or access to native wildlife nurseries is anticipated. Potential impacts on wildlife movement opportunities would be *less than significant* and no mitigation is required.

e)

Proposed development on the project site could conflict with relevant policies of the Lafayette General Plan, as well as the City's Tree Protection Ordinance. Implementation of the above mitigation measures related to the protection of special-status species known or suspected from the project site would ensure conformance with relevant goals and policies in the Lafayette General Plan listed in Table 4.4-1.

General Plan Policy OS-4.4 and Program OS-4.4-1 pertain to protecting trees, woodlands, and other native vegetation, and avoiding the cutting of mature trees. Program OS-4.4-1 calls for preserving existing healthy trees and native vegetation to the "maximum extent feasible." The following provides a review of the project conformance to the tree-related provisions of the General Plan and City's Municipal Code.

Proposed development on the project site must comply with the provisions of the City's Tree Protection Ordinance. It is a violation to destroy a protected tree without a category I or category II permit, or as allowed under exceptions to the ordinance. A Category II permit applies to proposed tree removal on property associated with a development application, as is the case with the proposed project. The Tree Protection Ordinance allows for reasonable tree removal as part of development and typically requires

replacement as a condition, with replacement ratios defined in subsection 6-1707(G). Generally for each 6 inches or its fraction of the diameter of the tree to be removed, two 15-gallon trees are to be planted as replacement. Larger replacement trees may be required, or may be substituted at lower replacement ratios defined in subsection 6-1707(G)2 as determined by the City. An in-lieu payment of an amount set by resolution of the City Council may be paid if the property cannot accommodate replacement plantings.

The Arborist Report prepared by the applicant's consulting arborist and included in Appendix C provides information on 144 trees within about 50 feet of proposed improvements on the project site that qualify as protected under the City's Tree Protection Ordinance. The Arborist Report provided information on species, trunk dbh, ratings of health and structure, dripline dimensions, comments on condition, and recommended actions. The 144 trees evaluated had trunks ranging from 3" to 38" dbh, with the majority in fair to good health. General preservation recommendations were also provided in the Arborist Report, including avoiding compaction within the tree dripline, establishing a "protection zone" around trees to be retained and calling for supervision of any work within that zone by an on-site arborist with authority to direct activities, restricting landscaping near native oaks to avoid adverse conditions, and treatment of specific trees depending on improvements in close proximity.

As indicated in the proposed Tree Removal Plan (see Figure 3-17), grading and construction of the new driveway, parking, building, and other improvements would require the removal of a minimum of 14 trees with trunks ranging in size from 8 to 32" dbh. An additional 5 trees with trunk diameters ranging from 18 to 34" dbh may have to be removed due to encroachment in close proximity to the trunk and possible damage to the root system to accommodate new retaining walls and other improvements. An additional 34 trees to be preserved would be subjected to encroachment into the dripline. Oaks and most trees are highly sensitive to disturbance to the root systems, trunk, and major limb systems. If the root system is severely damaged or improper conditions are created as a result of increased irrigation, soil compaction, placement of fills, or other changes, existing trees may suffer severe decline and eventually death.

The Arborist Report provides a thorough review of existing tree resources on the project site and adequately assesses anticipated tree removal. Assumptions related to anticipated loss and risk of damage appear reasonable. The Arborist Report includes specific recommendations for treatment of individual trees where construction practices pose a higher risk of compromise or damage, in which case a Certified Arborist is to inspect excavation and possible need for root pruning. Fencing is recommended to protect trees to be preserved and restrictions on landscaping within tree driplines are recommended to prevent long-term damage to root zones as a result of artificial irrigation or other changes. Given that protected trees are proposed for removal as part of the proposed project, potential impacts on tree resources are considered a *significant* impact.

Replacement plantings have been proposed as part of the proposed Landscape Plan for the project (see Figure 3-19). These include at least 44 15-gallon oaks and other native tree species scattered around parking areas, the new building, and Mt. Diablo Boulevard frontage. Estimates of proposed tree replacement required under the City's Tree Protection Ordinance are identified in the Tree Removal Plan for the project (see Figure 3-17). Further review would be required as part of compliance with the City's Tree Protection Ordinance, which could allow a combination of tree replacement plantings and/or payment of in-lieu fees.

Significance Without Mitigation: Significant.

Mitigation Measure BIO-5: The proposed project shall comply with City of Lafayette Tree Protection Ordinance, Chapter 6-17 of the Lafayette Municipal Code, and a Tree Protection and Replacement Program (Program) shall be developed by a certified arborist and implemented to provide for adequate protection and replacement of native and planted trees larger than 6 inches dbh possibly affected by proposed improvements. A category II permit shall be obtained for the removal of any "protected tree," and replacement plantings shall be provided as approved by the City. If permitted, an appropriate in-lieu fee shall be paid to the City of Lafayette as compensation for "protected trees" removed by the proposed project, where sufficient land area is not available on-site for adequate replacement. The Program shall include the following provisions:

- Pursuant to the requirements of Section 6-1707.F of the Tree Protection and Preservation Ordinance, adequate measures shall be defined to protect all trees to be preserved. This shall include installation of temporary construction fencing at the perimeter of the protected area, restrictions on construction within the fenced areas unless approved as a condition of the application and performed under the supervision of the certified arborist, and prohibition on parking or storing of vehicles and other construction equipment within the protected area.
- All grading, improvement plans, and construction plans prepared for potential future development for building permits shall clearly indicate trees proposed to be removed, altered, or otherwise affected by development construction. The tree information on grading and development plans shall indicate the number, size, species, assigned tree number and location of the dripline of all trees on the property that are to be retained/preserved.
- Details on relocation of any protected trees shall be defined as part of the Program. This shall include procedures for root system excavation, tree protection during relocation, planting bed preparation, short-term irrigation and monitoring, and compensatory mitigation if severely damaged during relocation or lost following planting.

Mitigation Measure BIO-5 would serve to address any potential adverse impacts on tree resources and would ensure compliance with the City's Tree Protection Ordinance. Consequently, future development on the project site would fully mitigate potential adverse effects and potential impacts would be *less than significant with mitigation*.

Significance With Mitigation: Less than significant.

f)

Implementation of the proposed project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. No such plans have been adopted encompassing the proposed project vicinity, and *no impacts* are anticipated.

V. CULTURAL RESOURCES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	❒	❒	❒	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	❒	■	❒	❒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	❒	■	❒	❒

EXISTING CONDITIONS

The first known inhabitants of the Lafayette area were Costanoan or Ohlone Native Americans who settled along Lafayette Creek and Happy Valley, as evidence by prehistoric archaeological finds.[48] European settlers arrived in the late 18th Century when Franciscan priests from Spain established missions. Likely Native Americans who were in the area were speakers of a Bay Miwok language, part of the Utian language family. Subsequently, Lafayette was developed along two important pioneer roads in the area, known today as Mt. Diablo Boulevard and Moraga Road. In 1965, the decision was made to locate a Bay Area Rapid Transit (BART) station in downtown Lafayette, three years before the City of Lafayette was incorporated.

The project site is located within a relatively undeveloped area of Lafayette and is developed with a gravel access road and graded lot, containing no structures undeveloped. There are no nearby existing buildings or structures included in the National Register of Historic Places or the California Office of Historic Preservation (OHP).[49] In addition, the project site does not contain any of the five officially-designated historic landmarks of the City of Lafayette.[50]

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to cultural resources. Specifically, Chapter I: Land Use Element includes goals and policies aimed at protecting cultural resources by identifying and protecting locations of cultural, social, or economic important that may have spiritual significance to ancestral or living Native Americans. Additionally, the City has designated several buildings and sites as historic landmarks for which changes to these locations must be approved by the City.[51]

[48] Lafayette Historical Society, Lafayette: A Pictorial History, Indian Country, http://lafayettehistory.org/town-history/pictorial-history/indian-country/, accessed on November 4, 2016.

[49] National Register of Historic Places, http://nrhp.focus.nps.gov, accessed on November 4, 2016.

[50] Lafayette Downtown Specific Plan, 2012, Chapter 4: Downtown Character, http://www.lovelafayette.org/home/showdocument?id=1507, accessed on November 4, 2016, page 60.

[51] City of Lafayette, 2002, General Plan, available online at https://www.lovelafayette.org/city-hall/city-departments/planning-building/general-master-specific-plans/general-plan, accessed October 15, 2020.

DISCUSSION

a)

As described above, the project site is currently undeveloped. Under CEQA, both prehistoric and historic-period archaeological sites may qualify as historical resources. Archaeological resources are discussed below. With no historical resources available on the project site, there would *no impact.*

b)

The project site is currently undeveloped and is not identified as a cultural resource under the Lafayette General Plan and no known archaeological resources are located on the project site. However, project construction such as site preparation, grading, and excavating could potentially expose previously undiscovered buried archaeological resources on the projects site. Therefore, activities associated with the construction of the proposed project have the potential to adversely affect unknown resources.

California Public Resource Code Section 21083.2, Archaeological Resources, requires that reasonable efforts be taken to preserve the resources in place and details required procedures if unique archaeological resources cannot be preserved in place. Therefore, compliance with State regulations and with General Plan Goal LU-22 and Policy LU-22.1, which call for protection of archaeological resources, would ensure that the potential impacts to archaeological resources are minimized to the maximum extent practicable.[52] Nonetheless, impacts to unknown archaeological resources would be potentially significant; however, with implementation of Mitigation Measure CULT-2, the impact on archaeological resources would be *less than significant.*

Significance without Mitigation: Potentially Significant.

Impact CULT-2: Implementation of the proposed project would have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

> Mitigation Measure CULT-2: If prehistoric or historical archaeological deposits or tribal cultural resources are discovered during project activities, all work within 25 feet of the discovery shall be redirected, the Planning Department shall be contacted directly, and a qualified archaeologist shall be contacted to assess the situation, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. Preservation in place shall be implemented if feasible. Excavation as mitigation shall be limited to those parts of resources that would be damaged or destroyed by the proposed project. Possible mitigation under CEQA emphasizes preservation in place measures, including planning construction to avoid archaeological sites, incorporating sites into open spaces, covering sites with stable soils, and deeding the site into a permanent conservation easement. Project personnel should not collect or move any archaeological materials or human remains and associated materials. Archaeological resources and tribal cultural resources can include flaked-stone

[52] City of Lafayette General Plan, Chapter 1, Land Use.

tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite tool-making debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone-milling equipment (e.g., mortars, pestles, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.

Significance with Mitigation: Less than significant.

c)

Similar to the discussions under Criteria (a) and (b) above, there are no known human remains on the project site; however, the potential to unearth unknown remains during ground disturbing activities associated with construction of the project could occur. Any human remains encountered during ground-disturbing activities associated with the proposed project would be subject to federal, State, and local regulations to ensure no adverse impacts to human remains would occur in the unlikely event human remains are found. California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (CEQA), mandate procedures of conduct following the discovery of human remains. According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken.

Without mitigation, potentially unearthing human remains on the project site would result in a *significant* impact.

Significance without Mitigation: Significant.

Impact CULT-3: Implementation of the proposed project would have the potential to disturb human remains, including those interred outside of formal cemeteries.

Mitigation Measure CULT-3: In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The City of Lafayette and the Contra Costa County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours, who would, in turn, notify the person the NAHC identifies as the Most Likely Descendants (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.

Significance with Mitigation: Less than significant.

VI. ENERGY

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	❒	❒	■	❒
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	❒	❒	■	❒

EXISTING CONDITIONS

The City of Lafayette is serviced by Pacific Gas and Electric (PG&E) for gas and electricity. PG&E is responsible for maintenance, operation, and repair of all transformers and electrical facilities within the City. Utility uses for the proposed project include natural gas for water heaters, kitchen equipment, electric outlets for facility accessories, among other common and diverse uses.[53]

The City of Lafayette is also serviced by Marin Clean Energy (MCE) which was formed in 2008 as California's first Community Choice Aggregation (CCA) agency.[54] CCA's came into existence through the passing of Assembly Bill 117 in 2002, which offered an opportunity for California communities to choose the source of their electricity.[55] With electricity serviced from MCE, customers can choose how much renewable energy is in their electricity service. The mission of MCE is to lower its customers greenhouse gas emissions in an effort to reduce their communities carbon footprint. MCE works in collaboration with PG&E, utilizing the existing meters and reading from PG&E, as well as the power line maintenance and billing. However, MCE is responsible for buying and providing electricity from renewable sources which include solar, wind, geothermal, hydroelectric, and bioenergy from location within California, Colorado, and the Pacific Northwest. MCE reports their energy procurement annually to the California Public Utilities Commission and the California Energy Commission to verify the amount of renewable energy provided to customers. Opting in or enrolling for electricity provision from MCE is made by simply contacting their office by phone or email, with the prospective customers PG&E account information to allow for a merging of service.[56] Lafayette businesses and residents can between MCE and PG&E for their power supply, however they are automatically enrolled in MCE's "light green" power supply if they do not make a choice, which include 50 percent renewable power. Customers can also opt-in to MCE's "deep green" 100 percent renewable energy option or MCE's "local sol" 100 percent local solar option.[57]

[53] Pacific Gas and Electric. 2007. Company Service Territory. https://www.pge.com/mybusiness/customerservice/otherrequests/treetrimming/territory/. Accessed November 21, 2020.
[54] Marin Clean Energy. 2020. My Community My Choice. https://www.mcecleanenergy.org/. Accessed November 21, 2020.
[55] Assembly Bill No. 117, available online at http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0101-0150/ab_117_bill_20020924_chaptered.pdf
[56] Marin Clean Energy. 2020. My Community My Choice. https://www.mcecleanenergy.org/. Accessed November 21, 2020.
[57] City of Lafayette. 2018. Marin Clean Energy (MCE). https://www.lovelafayette.org/city-hall/commissions-committees/environmental-task-force/marin-clean-energy-mce. Accessed October 15, 2020.

Energy Efficiency regulations applicable to the proposed project include the current Building Energy Efficiency Standards, the City of Lafayette's Environmental Action Plan, and California Green Building Standards Code (CALGreen), which include performance standards for energy efficiency and require installation of electric vehicle charging stations and secured bicycle parking.[58,59,60]

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to energy. Specifically, Chapter III: Open Space and Conservation Element includes goals and policies aimed energy conversation. Chapter V: Housing also includes goals and policies related to energy conservation, climate change, and sustainability. These measures also ensure compliance the requirements of Title 24 of the California Building Code.[61]

DISCUSSION

a)

Short-Term Construction Impacts

Construction of the proposed project would create temporary increased demands for electricity and vehicle fuels. Transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of vehicles, and travel mode. Transportation energy use during construction would come from the transport and use of construction equipment, delivery vehicles, and construction employee vehicles that would use diesel fuel and/or gasoline. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. Upon completion of project construction, all construction-equipment would cease. Furthermore, the construction contractors are anticipated to minimize non-essential idling of construction equipment during construction in accordance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9. Construction trips would also not result in unnecessary use of energy since the project site is served by SR-24, which is a direct route from various areas of the region.

While electric-powered construction equipment could be used, it is anticipated that the equipment would be limited to hand tools (e.g., power drills) and lighting, which would result in minimal electricity demands. In addition, it is not anticipated construction activities would require use of natural gas-powered equipment. Project construction would also be required to comply with the City of Lafayette Municipal Code which includes specific requirements sourced from the California Green Building

[58] California Energy Commission. 2020. Building Energy Efficiency Standards – Title 24. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards. Accessed October 15, 2020.

[59] City of Lafayette. 2011. Environmental Action Plan. https://www.lovelafayette.org/home/showdocument?id=4138. Accessed October 15, 2020.

[60] Department of General Services. 2020. CALGreen, https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#@ViewBag.JumpTo. Accessed October 15, 2020.

[61] City of Lafayette. 2002. General Plan.https://www.lovelafayette.org/city-hall/city-departments/planning-building/general-master-specific-plans/general-plan. Accessed October 15, 2020.

Standards Code that include recycling construction materials and energy efficiency standards that apply to construction to minimize wasteful, inefficient, and unnecessary energy consumption. Therefore, energy use during construction of the project would not be considered inefficient, wasteful, or unnecessary. Impacts would be *less than significant*.

Long-Term Operation Impacts

Operation of the proposed project would create demands for electricity and natural gas as compared to existing conditions and would result in new transportation energy use. Operational use of energy would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems, use of on-site equipment and appliances; and indoor, outdoor, perimeter, and parking lot lighting.

Electrical Energy

Electrical service to the proposed project would be provided by Marin Clean Energy (MCE) through connections to existing off-site electrical lines and new on-site infrastructure. As shown in Table 4.6-1, electricity use at the project site would be 211,302 kilowatt hours per year.

TABLE 4.6-1 PROJECT ANNUAL ELECTRICITY CONSUMPTION

Land Use	Electricity (kWh/year)
Medical Office Building	206,332
Parking Lot	4,970
Total	**211,302**

Source: CalEEMod 2016.3.2.25. See Appendix A.
[1] Based on electricity rates in CalEEMod.
[2] New buildings are modeled based on the 2019 Building and Energy Efficiency Standards, with a total reduction of 10.7 percent from the 2016 standards.

The proposed project would increase energy demand at the site compared to existing conditions, but it would be required to comply with the current Building Energy Efficiency Standards and CALGreen; therefore, it would not result in wasteful or unnecessary electricity demands. Therefore, the proposed project would result in *less than significant* impacts related to electricity.

Natural Gas Energy

The proposed natural gas consumption for the project site is shown in Table 4.6-2. The proposed facilities would generate an average natural gas demand of 194,682 kilo British thermal units per year. However, because the proposed project would be built to meet the Building Energy Efficiency Standards, it would not result in wasteful or unnecessary natural gas demands. Therefore, operation of the proposed project would result in *less than significant* impacts with respect to natural gas usage.

TABLE 4.6-2 PROJECT ANNUAL NATURAL GAS CONSUMPTION

Land Use	Natural Gas (kBTU/year)[1]
Medical Office Building	194,682
Parking Lot	0
Total	194,682

Source: CalEEMod 2016.3.2.25. See Appendix A.
[1] Based on natural gas consumption rates in CalEEMod.
[2] New buildings are modeled based on the 2019 Building and Energy Efficiency Standards, with a total reduction of 1 percent from the 2016 standards.

Transportation Energy

The proposed project would consume transportation energy during operations from the use of motor vehicles. Because the efficiency of the motor vehicles in use, such as the average miles per gallon for motor vehicles involved with the proposed project are unknown, estimates of transportation energy use is assessed based on the overall VMT and related transportation energy use. The proposed project-related VMT would primarily come from visitors to the project site. The total annual VMT for the proposed project is estimated to be 645,642 miles. While project implementation would result in new visitors to the site, the project would serve the local population. Serving the local community could contribute to reducing the vehicle miles traveled by providing the local community with closer options. In addition, the proposed project would include bike storage facilities, clean air and EV parking, and pedestrian access to the site. These features and aspects of the proposed project would contribute in minimizing VMT and transportation-related fuel usage. Thus, it is expected that operation-related fuel usage associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than similar development projects. Therefore, impacts would be less than significant.

b)

The California Renewables Portfolio Standard (RPS) was established in 2002 under SB 1078 and was amended in 2006 and 2011. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. Renewable energy sources include wind, small hydropower, solar, geothermal, biomass, and biogas. Electricity production from renewable sources is generally considered carbon neutral. Executive Order S-14-08, signed in November 2008, expanded the state's RPS to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Senate Bill 350 (SB 350, de Leon) was signed into law September 2015 and establishes tiered increases to the RPS. SB 350 requires renewable energy resources of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures. On September 10, 2018, Governor Brown signed Senate Bill 100 (SB 100), which raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by

December 31, 2045. Under SB 100 the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Electrical needs to the project site would be provided by Marin Clean Energy (MCE). MCE obtains electricity from conventional and renewable sources throughout California. In 2019, 60 percent of the electricity from MCE's Light Green Power Mix was generated from renewable energy sources; 29 percent from large hydroelectric generators; and 10 percent from unspecified sources.[62] The new power demand associated with the project is anticipated to be within the service capabilities of MCE and would not impede MCE's ability to implement California's renewable energy goals. Therefore, the project would not obstruct a state or local plan for renewable energy.

In addition, the proposed project would also be required to comply with the energy efficiency goals and policies provided in the City of Lafayette's Environmental Action Plan (EAP). The proposed project would incorporate a number of environmentally conscious design features consistent with the goals of the EAP. The proposed project will have bike storage facilities, clean air and EV parking, low-flow water fixtures, high-efficiency lighting, and drought-resistant, California-native landscaping. Furthermore, the new buildings are required to comply with the current Building Energy Efficiency Standards and CALGreen. Thus, the project would be consistent with the energy efficiency goals and measures identified each of these local plans. Therefore, the impacts would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

[62] MCE Clean Energy. 2020. 2019 Power Content Label. https://www.mcecleanenergy.org/wp-content/uploads/2020/10/MCE-2019-Power-Content-Label.pdf. Accessed November 17, 2020.

VII. GEOLOGY AND SOILS

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

The following discussion draws upon the findings of a recent geotechnical investigation of the project site *Preliminary Geotechnical & Geologic Hazard Investigation*, prepared by Cornerstone Earth Group, dated September 10, 2019, herein referred to as Geotechnical Investigation.[63] This document is included for reference in Appendix D of this Initial Study.

EXISTING CONDITIONS

The proposed project is located on the northern portion of the Diablo Range which exists within a series of northwesterly-aligned mountains that form the Coast Ranges geomorphic California province that stretches from the Oregon border almost to Point Conception. Within the San Francisco Bay area, most of the Coast Ranges developed on a foundation of tectonically mixed Cretaceous- and Jurassic-aged rocks of the Franciscan Complex ranging from 70- to 200-million years old. Above the foundational rocks, younger sedimentary and volcanic units are located. Covering most of the Coast Ranges, younger surficial deposits are present that reflect geologic conditions of the last million years or so.

[63] Cornerstone Earth Group, September 10, 2019. *Preliminary Geotechnical and Geologic Hazard Investigation Health and Healing Campus Mount Diabolo Boulevard, Lafayette, California.*

The San Andreas Fault system, the meeting point of the North American plate to the east and the Pacific plate to the west, is roughly 40 miles wide in the Bay Area and extends from the San Gregorio Fault near the Pacific ocean to the Coast Ranges-Central Valley blind thrust at the western edge of the Great Central Valley of California. The San Andreas Fault is the dominant structure in the system. It spans almost the entire length of California and is capable of producing the highest magnitude earthquakes. Other faults are nearby, including the Hayward Fault, which are equally as active and strong as the San Andreas fault. The dominant movement on these faults is right-lateral movement, however an increasingly large amount of thrust faulting also results from compression across the system.[64]

The proposed project is located roughly 5.5 miles northeast of the Hayward Fault. Based on the Geotechnical Investigation and review of Quaternary geologic maps of the area[65,66], the site is underlain by Pliocene to late Miocene sedimentary rocks. These rocks consist of interbedded sandstone and claystone. A likely landslide was previously mapped across most of the site.[67]

The site is currently an undeveloped north facing hillside extending from Mount Diablo Road on the north at an elevation of 370 feet at the northeast corner to 505 feet along the southern property line. Aerial images from 1939 to 1980 show the site in a natural and undeveloped state. In 1987, an unpaved road was graded through the lower portion of the site from Mount Diablo Boulevard uphill until it is covered by trees. In April 2011, images show the construction of a water tank uphill and off-site to the south, where it is still present. Stockpiles were located on the lower portions of the site until January 2012. Later imagery shows the site similar to its current state. Lower portions of the site were used temporarily as a lay-out yard for utility companies working along Mount Diablo Boulevard. This lay-out area is covered with a gravely road base engineered fill and contains with straw waddles and silt fencing. The site is wooded with bay and oak trees as well as shrubs and coyote bush on the low open hillslope. Slopes ranging from five to 20 feet tall are located along the western edge in the seasonal drainage, as well as on the upland off-site slopes to the west and south. Inclinations across the project location ranges from 3:1 to 6:1 slope on the northern half of the parcel, to 2:1 to 3:1 on the upper southern part of the site. Slopes of 1:1 to near vertical are present on the drainage ravine slopes. On the western corner of the site, bedrock is exposed in the bottom of the seasonal drainage due to incision.[68]

The 2007 Working Group on California Earthquake Probabilities, a collaborative effort involving the California Geological Survey (CGS), Southern California Earthquake Center, and U.S. Geological Survey (USGS), estimated that the 30-year probability of a magnitude 6.7 or greater earthquake striking the San

[64] Cornerstone Earth Group, September 10, 2019. *Preliminary Geotechnical and Geologic Hazard Investigation Health and Healing Campus Mount Diabolo Boulevard, Lafayette, California*.

[65] Graymer, R.W., 2000, Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco, California: U.S. Geological Survey, Miscellaneous Field Studies map MF-2342, scale 1:50,000.

[66] Dibblee, T.W., and Minch, J.A., 2005, Geologic Map of the Briones Valley Quadrangle, Contra Costa & Alameda Counties, California: Dibble Geological Foundation, Dibblee Foundation Map DF-148, scale 1:24,000.

[67] Hayden, W.D., 1995, Landslides and related slope features map: California Division of Mine and Geology, Open-File Report OFR 95-12, scale 1:24,000.

[68] Cornerstone Earth Group, September 10, 2019. *Preliminary Geotechnical and Geologic Hazard Investigation Health and Healing Campus Mount Diabolo Boulevard, Lafayette, California.*

Francisco Bay area was 63 percent.[69] The California Geologic Survey (CGS) in their implementation of the state-wide under the 1972 Alquist-Priolo Act, has not identified any active or potentially active earthquake faults at the project site or in its immediate vicinity.

The closest CGS-mapped active fault is the Concord Fault, which trends north-northwest and lies roughly 7.4 miles east-northeast of the project site at its closest approach. Nevertheless, an earthquake of moderate to high magnitude generated within the San Francisco Bay area could produce strong ground shaking at the project site. The degree of shaking would be subject to a number of variables, such as the magnitude of the event, the distance to the zone of rupture, and local geologic conditions.

The CGS' Seismic Hazards Mapping Program has not published any (seismically induced) liquefaction hazard zone maps for the project site or its vicinity, although a 2006 USGS evaluation of liquefaction susceptibility in the east San Francisco Bay area classified the alluvium flanking Lafayette Creek as a zone of "moderate" liquefaction potential.[70]

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to geologic hazards. These measures reduce risks to Lafayette residents and property from landslides, earthquakes, and other geologic hazards.[71]

DISCUSSION

ai- ii)

> The project site is located in a region with numerous active and potentially active faults, many of which have exhibited recurring seismic activity. No active or potentially active faults have been mapped within the City of Lafayette and the project site does not lie within a State-designated Alquist-Priolo Fault Zone. The lack of mapped active and potentially active faults notwithstanding, the project site could be subjected to strong ground shaking during an earthquake on a nearby fault such as the Hayward Fault to the west, the Concord Fault to the east, the Calaveras Fault to the southeast, or another active fault in the San Francisco Bay Area. The effects of earthquake-related ground shaking could include damage to buildings, streets, and utilities. During project construction, compliance with the latest California Building Code (CBC) requirements, adopted by reference in the City of Lafayette Municipal Code, would help ensure that the proposed structures are able to resist minor earthquakes without damage, resist moderate earthquakes without structural damage (but with some

[69] California Geological Survey and Southern California Earthquake Center. 2007 Working Group on California Earthquake Probabilities, The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2). CGS Special Report 203, URL: http://pubs.usgs.gov/of/2007/1437/.

[70] US Geological Survey, 2006, Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California, Open-File Report 2006-1037, geology by Robert C. Witter, Keith L. Knudsen, Janet M. Sowers, Carl M. Wentworth, Richard D. Koehler, and Carolyn E. Randolph.

[71] City of Lafayette, 2002, General Plan, available online at https://www.lovelafayette.org/city-hall/city-departments/planning-building/general-master-specific-plans/general-plan, accessed October 15, 2020.

nonstructural damage), and resist major earthquakes without collapse, but with some structural as well as nonstructural damage. In light of these requirements, the impacts of ground shaking are considered *less than significant*.

aiii)

The project site, as well as much of downtown Lafayette, is located in an area with a moderate susceptibility to liquefaction according to the USGS.[72] The CGS, in implementing the California Seismic Hazards Mapping Program, has not identified any seismically induced liquefaction hazard zones at the project site or in its vicinity.[73] Similarly, the Geotechnical Investigation evaluated the liquefaction potential of subsurface soils based on visual classification of sample materials from the project site. Based on laboratory tests of soil samples from those borings, as well as detailed soil logging, the evaluation concluded that the potential for liquefaction at that property was low. Considering the findings of the Geotechnical Investigation, the impacts of seismically induced liquefaction would be *less than significant*.

aiv)

As described above, the topography at the project site is typified by moderately sloping terrain. The southern half of the site is underlain by a landslide and based on the Geotechnical Investigation, at least one older landslide may be present on the site. The Report identified and mapped two types of slides on the site, which are designated as inactive (Qlo) and active (Qls), consistent with its location on the north flank of the Lafayette Creek valley. The CGS, in implementing the CA Seismic Hazards Mapping Program, has not identified any seismically induced landslide hazard zones at the project site or in its vicinity.[74] In addition, the Geotechnical Investigation concluded that the risk associated with lurching and lateral spreading was minor to negligible. These interpretations are generally consistent with the lack of steep slopes at or near the project site. Accordingly, the impact of project construction on landslides, mudslides, or other similar hazards would be *less than significant*.

b)

Construction of the project would entail significant grading and excavation. Such activities invariably carry some potential for soil erosion and/or loss of topsoil. A number of existing, applicable regulatory mechanisms seek to control erosion during construction. One of these controls can be found in LMC Chapter 3-7 where the Contra Costa County Grading Ordinance, Section 716-2.604, is adopted by

[72] US Geological Survey, 2006, Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California, Open-File Report 2006-1037, geology by Robert C. Witter, Keith L. Knudsen, Janet M. Sowers, Carl M. Wentworth, Richard D. Koehler, and Carolyn E. Randolph.

[73] CGS, 2003, State of California Seismic Hazard Zones, Briones Valley Quadrangle, Official Map, February 14, 2003, scale 1:24,000.

[74] CGS, 2003, State of California Seismic Hazard Zones, Briones Valley Quadrangle, Official Map, February 14, 2003, scale 1:24,000.

reference.[75] These regulations prohibit any person from grading, whether or not a permit is required, such that dirt, soil, rock, debris, or other material washed, eroded, or moved from the property by natural or artificial means creates a public nuisance or hazard. Additional regulatory erosion controls are required under the City's Stormwater Pollution Prevention regulations. LMC Chapter 5-4 requires the development and implementation of Stormwater Pollution Prevention Plans (SWPPP). These plans must embrace BMPs in order to control erosion at construction sites. Compliance with these existing regulatory requirements would reduce potential impacts from substantial erosion and/or the loss of topsoil to a *less than significant* level.

c)

The proposed project is located roughly 5.5 miles northeast of the Hayward Fault. Based on the site Geotechnical Investigation, the site is underlain by Pliocene to late Miocene sedimentary rocks that generally consist of interbedded claystone and sandstone. Furthermore, a probable landslide was previously mapped across the majority of the site. Two ages of landslide deposits were identified, designated as inactive (Qlo) and active (Qls). The largest and oldest deposit displaced bedrock approximately 20 to 40 feet northward in a shallow translational slide, while the younger, successive north and northwest verging slides cover the head scarp of the oldest slide. During test pits and borings performed on the site, distinct shearing or landslide features were not discovered, however zones of weak and fractured rock were encountered between 10 and 20 feet below the surface, which correlates to depths at which landslides may have occurred. The Geotechnical Investigation Report found that no development is currently proposed in the existing landslide areas, and that therefore, slope stabilization or mitigation is not considered necessary at this time since new site improvements appear to be setback an acceptable distance from the existing landslides.

Lateral spreading occurs when horizontal or lateral ground movement of flat-lying soil deposits move towards a free face such as a channel, excavation, or open body of water. At the project site, an unlined drainage swale exists near the northwest side of the property. There is also an unlined creek channel near the property boundary along Mount Diablo Boulevard. During the field visit, predominantly stiff to very stiff clay alluvial soils were encountered. These soils site atop bedrock and the high ground water is estimated to be below a depth of 40 to 50 feet. Therefore, due to these factors, the potential for lateral spreading on the project site is low.

Subsidence occurs when the ground settles or sinks with little horizontal motion. Sites with loose unsaturated sandy soils can settle during strong seismic shaking. The soils encountered at the site during the field survey were predominantly stiff to very stiff clays overlying claystone and sandstone bedrock. Therefore, the potential for significant differential seismic settlement, or subsidence, affecting the project site is low.

The project site is mapped within a zone of low to very low liquefaction potential based on the type and age of shallow bedrock and sedimentary soils on the site. Additionally, the field and laboratory evaluation

[75] City of Lafayette Municipal Code, 2015, https://www.municode.com/library/ca/lafayette/codes/code_of_ordinances?nodeId=TIT3BURE_CH3-7GR, accessed on January 6, 2017.

conducted for the site did not reveal any subsurface groundwater and primarily medium stiff to very stiff cohesive alluvial soils underlain by claystone and sandstone bedrock were encountered, which are less susceptible to liquefaction potential. Therefore, the Geotechnical Investigation found that the project site has a low to very low liquefaction potential.

In conclusion, due to the findings described in the Geotechnical Investigation, the proposed project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

d)

The detailed Geotechnical Investigation prepared for the project site included the drilling and sampling of exploratory soil borings, and testing of soil samples to characterize the existing soil, colluvium, and bedrock (for parameters such as moisture content and plasticity index). The indicated plasticity of these samples suggested that the soil expansion potential was moderate to high for surficial soils and bedrock. Accordingly, the Geotechnical Investigation developed recommendations for grading and foundation design that are intended to mitigate expansive soils and other site-specific geologic conditions and to reduce the potential for damage to the planned structures. These recommendations include that slabs-on-grade should have sufficient reinforcement and be supported on a layer of non-expansive fill; footings should extend below the zone of seasonal moisture fluctuation; moisture changes in the surficial soils should be limited by using positive drainage away from buildings as well as limiting landscaping watering; and an evaluation of the potential import sources for the site should consider the acceptable range of plasticity, especially in the upper two feet of fill. Additionally, the Geotechnical Investigation includes further preliminary grading and foundation recommendations addressing concerns associated with expansive soils.[76]

If these recommendations are not adhered to, project construction could result in significant impacts with respect to expansive soils. However, with implementation of Mitigation Measure GEO-4, the impact on expansive soil would result in a *less than significant* level.

Significance without Mitigation: Significant.

Impact GEO-4 The site's location on expansive soils, as defined by Table 18-1-B of the Uniform Building Code (1994), would create substantial direct or indirect risks to life or property.

> Mitigation Measure GEO-4: Implementation of the recommendations found in the Preliminary Geotechnical & Geologic Hazard Investigation, prepared by Cornerstone Earth Group, dated September 10, 2019.

e)

[76] Cornerstone Earth Group, September 10, 2019. *Preliminary Geotechnical and Geologic Hazard Investigation Health and Healing Campus Mount Diabolo Boulevard, Lafayette, California.*

The development of the proposed project would not require the construction or use of septic tanks or alternative wastewater disposal systems. Wastewater generated by the proposed project would be conveyed to the existing municipal sanitary sewer system that is maintained by the Central Contra Costa Sanitary District, then conveyed to the District's 54 million-gallon-per-day treatment plant in the nearby City of Martinez, California.[77] As such, there would be *no impact* from the proposed project associated with soils that might be incapable of supporting the use of septic tanks or alternative wastewater disposal systems.

f)

The project site is currently undeveloped. While no paleontological resources have been identified within the project location, because the proposed project requires substantial excavation there could be fossils of potential significance and other unique geological features that have not been recorded. Therefore, ground-disturbing construction associated with development under the proposed project could cause damage to, or destruction of, paleontological resources or unique geologic features. However, implementation of Mitigation Measure GEO-2, the proposed project would result in a *less-than-significant* impact on potentially undiscovered paleontological resources or geologic feature.

Significance without Mitigation: Potentially Significant.

Impact GEO-6: Ground-disturbing construction associated with development under the proposed project could cause damage to, or destruction of, paleontological resources or unique geologic features.

> Mitigation Measure GEO-6: If paleontological resources are encountered during grading or excavation, all construction activities within 50 feet must stop and the City shall be notified. A qualified archeologist shall inspect the findings within 24 hours of discovery. Cultural resources shall be recorded on California Department of Parks and Recreation (DPR) Form 523 (Historic Resource Recordation form). If it is determined that the proposed project could damage unique paleontological resources, mitigation shall be implemented in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines. Possible mitigation under Public Resources Code Section 21083.2 requires that reasonable efforts be made for resources to be preserved in place or left undisturbed. Preservation in place shall be implemented if feasible. Excavation as mitigation shall be limited to those parts of resources that would be damaged or destroyed by a project. Possible mitigation under CEQA emphasizes preservation in place measures, including planning construction to avoid archaeological sites, incorporating sites into parks and other open spaces, covering sites with stable soil, and deeding the site into a permanent conservation easement. Under CEQA Guidelines, when preservation in place is not feasible, data recovery through excavation shall be conducted with a data recovery plan in place. Therefore, when considering these possible mitigations, the City shall have a preference for preservation in place.

[77] Central Contra Costa Sanitary District, 2020, Treatment Plan, available online at https://www.centralsan.org/treatment-plant, accessed on November 19, 2020.

VIII. GREENHOUSE GAS EMISSIONS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	❒	❒	■	❒
b) Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	❒	❒	■	❒

EXISTING CONDITIONS

The proposed project site is currently undeveloped and, therefore, does not generate any GHG emissions associated with the burning of fossil fuels in cars (mobile sources); energy use for cooling, heating, and cooking (energy); water use and wastewater and solid waste generation; and landscape equipment use (area sources).

Regulatory Framework

The United States Environmental Protection Agency (USEPA) announced on December 7, 2009, that greenhouse gas (GHG) emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 United States Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[78] The USEPA's endangerment finding covers emissions of six key GHGs—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to future development facilitated by the proposed project because they constitute the majority of GHG emissions.[79]

The *2017 Climate Change Scoping Plan* and was approved on December 14, 2017. The *2017 Climate Change Scoping Plan* establishes a new emissions limit of 260 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by

[78] United States Environmental Protection Agency (USEPA), 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment, Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity, December, http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252.

[79] United States Environmental Protection Agency (USEPA), 2014, Climate Change Indicators: U.S. Greenhouse Gas Emissions, available online at https://www.epa.gov/climate-indicators/climate-change-indicators-us-greenhouse-gas-emissions, accessed on November 21, 2020.

2030. The *2017 Climate Change Scoping Plan Update* includes the potential regulations and programs to achieve the 2030 target.[80]

Future developments would be required to comply with the current Building Energy Efficiency Standards and California Green Building Standards Code (CALGreen), at minimum, which include performance standards for energy efficiency and require installation of electric vehicle charging stations and secured bicycle parking.[81,82]

City of Lafayette Environmental Action Plan

The City of Lafayette issued an Environmental Action Plan in 2011 as a policy document that includes programs and goals to enable the City to maintain local control while subsequently implement State mandates to lower greenhouse gas emissions and to monitor other environmental factors. The programs are recommended methods of achieving GHG emissions reductions within the community. The Action Plan includes a number of policies, procedures, and programs related to the City's approach to future development.[83]

DISCUSSION

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), into the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[84]

Information on manufacture of cement, steel, and other "life cycle" emissions that would occur as a result of the project are not applicable and are not included in the analysis. Black carbon emissions are not included in the GHG analysis because the California Air Resources Board (CARB) does not include this pollutant in the state's Assembly Bill (AB) 32 inventory and treats this short-lived climate pollutant

[80] California Air Resources Board, 2017, California's 2017 Climate Change Scoping Plan, The Strategy for Achieving California's 2030 Greenhouse Gas Target, available online at https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, accessed March 26, 2020.

[81] California Energy Commission, 2020, Building Energy Efficiency Standards – Title 24, available online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards, accessed March 26, 2020.

[82] Department of General Services, 2020, CALGreen, available online at https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#@ViewBag.JumpTo, accessed March 26, 2020.

[83] City of Lafayette, 2011, Environmental Action Plan, available online at https://www.lovelafayette.org/home/showdocument?id=4138, accessed October 15, 2020.

[84] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

separately. A background discussion on the GHG regulatory setting and GHG modeling can be found in Appendix A to this Initial Study.

a)

A project does not generate enough GHG emissions on its own to influence global climate change; therefore, this Section measures the project's contribution to the cumulative environmental impact associated with GHG emissions. Based on the nature and scope of the proposed improvements, the project would primarily contribute to climate change through the construction activities needed to implement the project, which would generate a short-term increase in GHG emissions. The emissions generated by the project were evaluated using CalEEMod, Version 2016.3.2.25. The GHG emissions associated with the proposed project are shown in Table 4.8-1.

Construction Impacts

The Air District does not have thresholds of significance for construction related GHG emissions, which are one-time, short-term emissions and therefore would not significantly contribute to the long-term cumulative GHG emissions impacts of the proposed project. Construction activities generated by the proposed project are one-time emissions and not annual emissions that would occur on an annual basis. One-time, short-term emissions are converted to average annual emissions by amortizing them over the service life of a building. For buildings in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires the first major renovation.[85] Construction activities associated with the proposed project would take approximately 21 to 25 months. Given the size of the project and construction duration, construction emissions, when amortized over 30 years, would not have the potential to exceed the BAAQMD brightline threshold of 660 $MTCO_2e$. Therefore, construction related GHG emissions generated by the proposed project would be considered a *less than significant* impact.

Operational Impacts

Implementation of the proposed project would result in a new medical office building the project site that generates 166 weekday vehicle trips during a typical non-event day. Operation of the proposed project would result in GHG emissions from water use, wastewater and solid waste generation, area sources (e.g., consumer cleaning products), energy usage (i.e., natural gas and electricity), and vehicle trips. GHG emissions that are associated with the proposed project are shown in Table 4.3-1. As shown in this table, development of the proposed project would generate a total of 310 $MTCO_2e$ per year, which would not exceed the BAAQMD bright-line threshold of 660 $MTCO_2e$ that corresponds with SB 32. As a result, GHG emissions associated with the project are considered less than significant.

[85] International Energy Agency (IEA), 2008, July. Energy Efficiency Requirements in Building Codes, Energy Efficiency: Policies for New Buildings. https://www.iea.org/reports/energy-efficiency-requirements-in-building-codes-policies-for-new-buildings.

TABLE 4.8-1 PROJECT GHG EMISSIONS INVENTORY

	GHG Emissions	
	$MTCO_2e$ Per Year	Percent Proportion
Operations		
Area Sources[a]	<1	<1%
Energy Use[b]	20	6%
Mobile Sources	224	72%
Waste Generation	65	21%
Water/Wastewater[c]	1	<1%
Total	**310**	**100%**
BAAQMD Bright-Line Screening Threshold	660	NA
Exceeds Threshold?	No	NA

Source: CalEEMod, Version 2016.3.2.25
Notes: Totals may not equal 100 percent due to rounding.
[a] Modeling assumes building area 12,009 square feet.

b)

Applicable plans adopted for the purpose of reducing GHG emissions include the CARB Scoping Plan, *Plan Bay Area 2040*, and the Contra Costa County Climate Action Plan. A consistency analysis with these plans is presented below.

CARB's Scoping Plan

The CARB Climate Change Scoping Plan outlines the State's strategies to reduce GHG emissions in accordance with the targets established under AB 32 and Senate Bill (SB) 32. The Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions in the 2017 Climate Change Scoping Plan include: implementing SB 350, which expands the RPS to 50 percent by 2030 and doubles energy efficiency savings; expanding the Low Carbon Fuel Standards (LCFS) to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Statewide strategies to reduce GHG emissions include the low carbon fuel standards, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the Corporate Average Fuel Economy standards, and other early action measures as necessary to ensure the State is on target to achieve the GHG emissions reduction goals of AB 32 and SB 32. In addition, new buildings are required to comply with the current Building Energy Efficiency Standards and CALGreen. Because these GHG emissions reduction strategies are statewide measures, the proposed project would not interfere with their implementation. Additionally, the project's GHG emissions would be reduced from statewide compliance with these measures that have been adopted since AB 32 and SB 32 were adopted. The proposed project would have *no impact* on implementation of the CARB Scoping Plan.

Plan Bay Area

Plan Bay Area 2040 is the Bay Area's Regional Transportation Plan/Sustainable Communities Strategy, which identifies the sustainable vision for the Bay Area. As part of the implementing framework for *Plan Bay Area* 2040, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas in existing communities. The project site is not located in a PDA.[86] The proposed project would entail development of medical office and associated structures to support needed medical services. Therefore, the proposed project would not conflict with the *Plan Bay Area* 2040. Impacts would be *less than significant.*

City of Lafayette Environmental Action Plan

The City of Lafayette adopted the Environmental Action Plan (EAP) in 2011.[87] The EAP provides goals and recommended programs as well as GHG reduction measures to achieve the statewide AB 32 target of a 15 percent reduction below baseline emissions by 2020. Additionally, the EAP identifies reduction strategies including improvements in energy efficiency and conservation, renewable energy, land use and transportation, solid waste, water conservation, and government operations. The proposed project would incorporate environmentally-friendly design features consistent with the goals of the CAP. The proposed project will have bike storage facilities, clean air and electric vehicle (EV) parking, low-flow water fixtures, high-efficiency lighting, and drought-resistant, California-native landscaping. The project would be consistent with the goals and measures identified in the City's CAP. Therefore, the impacts would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

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[86] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2020, September 24 (accessed). Priority Development Areas (Plan Bay Area 2040) ArcGIS. https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=56ee3b41d6a242e5a5871b043ae84dc1.

[87] City of Lafayette. 2011. City of Lafayette Environmental Action Plan. https://www.lovelafayette.org/home/showdocument?id=4138.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
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 materials, substances or waste within one-quarter 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, 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, result in a safety hazard or excessive noise for people residing or working in the project area?	❒	❒	❒	■
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❒	❒	■	❒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	❒	❒	■	❒

EXISTING CONDITIONS

The California Department of Toxic Substances Control (DTSC) defines a hazardous material within the California Code of Regulations, Title 22, Section 66260.10 as: [88]

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

[88] Thomson Reuters Westland, 2020, Definitions, available online, accessed at https://govt.westlaw.com/calregs/Document/I9F2AC740D4BA11DE8879F88E8B0DAAAE?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default), accessed November 18, 2020.

Chemical and physical properties which classify a substance as hazardous include the properties of reactivity, corrosivity, ignitability, and toxicity. Health effects caused by hazardous materials exposure are influenced by factors such as the frequency of exposure, the dose to which the person is exposed, the exposure pathway, and individual susceptibility.

The DTSC maintains a Hazardous Waste and Substances List known as the Cortese List which is used by state and local agencies as well as developers to comply with CEQA requirements through disclosing locations and information about nearby hazardous materials sites.

In California, the unified hazardous materials and hazardous waste management program, known as the "Unified Program" was established by the Secretary for Environmental Protection. The Certified Unified Program Agencies (CUPA), under the Unified Program, locally administers and implements requirements, inspections, and permits for six programs, including the Underground Storage Tank (UST) program and the Hazardous Waste Generator/Tiered Permitting Program.

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to hazardous materials in Section VI. These measures reduce risks to Lafayette residents and property from the hazards of the storage, transportation and disposal of hazardous materials.[89]

DISCUSSION

a) - b)

The project would construct buildings on a previously undeveloped lot. During construction, the proposed project would involve the use, transportation, storage, and disposal of gasoline, oil, diesel fuel, solvents, paints, and other hazardous materials required for construction. Any transportation of hazardous materials would comply with all Caltrans, California Environmental Protection Agency, California Department of Toxic Substance Control, California Highway Patrol, and California State Fire Marshall regulations. In addition, handling and disposal of hazardous materials would be in accordance with all other federal, state, and local laws and regulations. Typical construction erosion control BMPs also would be implemented as discussed in the following Section IX, Hydrology and Water Quality.

Project operation would involve the use of small amounts of hazardous materials for cleaning and maintenance purposes, such as cleaners, degreasers, pesticides, and fertilizers. These potentially hazardous materials would not be of a type or be present in sufficient quantities to pose a significant hazard to public health and safety or the environment. Furthermore, such substances would be used, transported, stored, and disposed of in conformance with existing regulations of several agencies, including Resource Conservation and Recovery Act, which provides the 'cradle to the grave' regulation of hazardous wastes; Comprehensive Environmental Response, Compensation, and Liability Act, which

[89] City of Lafayette, 2002, General Plan – Section VI, available online at https://www.lovelafayette.org/Home/ShowDocument?id=1925, accessed October 15, 2020.

regulates closed and abandoned hazardous waste sites; the Hazardous Materials Transportation Act, which governs hazardous materials transportation on US roadways; The International Fire Code, which creates procedures and mechanisms to ensure the safe handling and storage of hazardous materials; California Code of Regulations (CCR) Title 22, which regulates the generation, transportation, treatment, storage and disposal of hazardous waste; and CCR Title 27, which regulates the treatment, storage and disposal of solid wastes.

Compliance with federal, state, and local laws and regulations and implementation of BMPs would ensure hazardous materials used during project demolition, construction, and operation would not create any hazards to the public or environment through the routine transport, use, or disposal of hazardous materials. Therefore, this impact would be *less than significant*.

c)

The nearest schools to the project site are Bentley Upper School, located 0.6 miles to the north, and the Contra Costa Jewish School, located 0.3 miles to the east. There are no schools located with 0.25 miles of the proposed project. Nevertheless, the new construction that would occur on the project site would be required to adhere to regulations enforced by federal, State, and local agencies related to hazardous materials and emissions. In addition, as discussed above, land uses proposed on the project site do not include any uses that require ongoing handling of hazardous materials, such as industrial uses.

The proposed project would not generate hazardous emissions or result in the type of handling or material storage that could potentially result in harmful, accidental upsets, potential impacts to any nearby schools Furthermore, Section 17213 of the California State Education Code prohibiting uses of toxic or hazardous materials and wastes within a ¼ mile of a school will be adhered to.[90] Therefore, the proposed project would have a *less than significant* impact from hazardous emissions, materials, substances, or wastes to nearby schools.

d)

The Cortese List discloses information related to the location of hazardous waste sites. A search of the Cortese List on Geotracker and Envirostor, performed on November 18, 2020, did not indicate the presence of any open or active hazardous material sites which have not yet been remediated within or adjacent to the four study areas of the proposed project.[91,92] The nearest active hazardous waste site is located more than a mile east of the project site. Therefore, because the proposed project is not included on a list of hazardous material sites, it would not create a significant hazard to the public or the environment, and there would be *no impact*.

[90] California Legislative Information, 2008, Education Code, available online at https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=EDC&sectionNum=17213, accessed March 20, 2020.

[91] State Water Resources Control Board, 2020, Geotracker, available online at https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Sacramento, accessed November 18, 2020.

[92] Department of Toxic Substances Control, 2020, EnvirStor , available online at https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002430, accessed November 18, 2020.

e)

The proposed project is not located within two miles of an airport or air related facilities. Nor is it located within an airport land use plan. The nearest airport is Buchanan Field Airport located eight miles northeast of the site. Therefore, there will be *no impacts* from airport related hazards.

f)

The Contra Costa County Fire Protection District (CCCFPD) provides fire protection to the project site and surrounding area. The City provides police protection to the project site and surrounding area. Emergency response from the CCCFPD and the City for fire and police protection, respectively, would remain the same as under existing conditions because the response time and distance would remain the same. The project site is in area of southwest Lafayette, and therefore, would be covered by the Lafayette EOP and the established prearranged emergency response procedures, identified evacuation routes, and executed mutual aid agreements for emergency assistance. The City's EOP identifies emergency planning, organization and response policies and procedures. The EOP addresses the City's responsibilities in emergencies associated with a "Hazards" approach in managing natural disasters and human-caused emergencies and provides a framework for response and recovery efforts. The proposed project would not include any characteristics (e.g., permanent road closures, etc.) that would physically impair or otherwise interfere with implementation of the EOP or any adopted emergency response plan or emergency evacuation plan for the project vicinity. Therefore, impacts would be *less than significant*.

g)

The project site is located in a very high fire hazard severity zone, as is most of northern and western Lafayette.[93] The project site is within Zone 13 of the City's Emergency Operations Plan: Wildland Fire Evacuation Plan. Zone 13 is characterized as a heavily wooded residential neighborhood surrounded by low rolling hills and vegetation, and is therefore at a higher risk of wildfires due to being intermixed with wildlands.[94] Nevertheless, building code fire safety requirements, design review by the CCCFPD, and relevant General Plan policies and Municipal Code ordinances would require the installation of alarm systems and fire suppression, the inclusion of fire-resistant building and roofing materials, the implementation of a Vegetation Management Plan, and payment of fire protection development fees. Compliance with these design specifications, fees, and policies would reduce this impact to *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

[93] California Department of Fire, 2020, California Fire Hazard Severity Zone Viewer, available online at https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414, accessed October 20, 2020.

[94] City of Lafayette, 2018, Emergency Operations Plan: Wildland Fire Evacuation Plan, available online at https://www.lovelafayette.org/Home/ShowDocument?id=4054, accessed October 9, 2020.

X. HYDROLOGY AND WATER QUALITY

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

EXISTING CONDITIONS

The project site is within the Las Trampas Creek Watershed, which encompasses approximately 27 square miles. This watershed is part of the larger Walnut Creek Watershed, which comprises about 150 square miles.[95] Lafayette Creek drains the southeastern slopes of the Briones Hills and passes through Lafayette about 1.6 miles east of the project site.

Water quality in Lafayette, including the project site, is regulated by the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) permit (MRP), Permit No. CAS612008 and Order No. R2-2015-0049, amended by Order. No. R2-2019-0004, issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB). The Contra Costa Clean Water Program's (CCCWP) Stormwater C.3 Guidebook ensures compliance with the C.3 requirements of the MRP and includes the preparation of project specific Stormwater Control Plans (SCPs) for new developments and redevelopments that meet certain criteria.

[95] California Department of Fish and Wildlife, BIOS, https://apps.wildlife.ca.gov/bios/, accessed September 28, 2020.

Furthermore, Chapter 5-4, *Stormwater Management and Discharge Control*, of the City of Lafayette's municipal code prohibits (1) the discharge of any substances other than storm water into storm drains and creeks, (2) illicit dumping of wastes into storm drains and creeks, and (3) the dumping of debris and refuse in and near waterways and their riparian areas. Chapter 3-7, *Grading,* of the municipal code details the requirements of grading permits for projects that move more than 50 cubic yards of soil. The intent is to ensure that grading minimizes impacts to drainage, erosion, and the natural features of the site, such as creeks, trees, swales, drainage ditches and so forth.

The City of Lafayette and the proposed project are not located within a designated groundwater basin, as identified by the San Francisco Bay RWQCB. The proposed project is within the service area of the East Bay Municipal Utility District (EBMUD), which receives its water supply primarily from surface water and the Mokelumne River. According to the Preliminary Geotechnical and Geologic Hazard Investigation for the proposed project, depth to groundwater is between 40 and 50 feet below ground surface and therefore, construction dewatering would not be necessary.[96]

The Lafayette Reservoir is located approximately 0.2 miles southwest from the proposed project. A small portion of the northern boundary of the site is within the dam inundation zone but no structures or development are planned for this area.[97] Because the inundation zone from a seiche would be much smaller than that of a dam failure, the inundation area from a seiche would not extend onto the site. Furthermore, the project site is not within a Federal Emergency Management Agency (FEMA)-designated 100-year floodplain.[98] Given that Lafayette is more than 10 miles inland from San Francisco Bay, there is also no potential for damage from tsunamis at the site.

The site is located on a north facing hillside at an elevation of 370 feet at the northeast corner to approximately an elevation of 505 feet along the southern property line. The steepest slopes are found along the western edge and the upland off-site slopes to the south and west. A seasonal drainage ravine is located along the western edge of the site.[99] The overall site drains from south to north.

The project site is currently undeveloped with a gravel access road and a gated entrance. The site consists of 7,625 square feet (SF) of impervious area and 242,915 SF of pervious area.[100] Stormwater runoff on the site is either absorbed by the soil or flows into the seasonal ravine and nearby catch basins. The catch basins discharge into the City's storm drain system along the south side of Mt. Diablo Boulevard. and eventually discharges into Lafayette Creek, which is north of Mt. Diablo Boulevard.

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[96] Cornerstone Earth Group, September 10, 2019. *Preliminary Geotechnical and Geologic Hazard Investigation Health and Healing Campus Mount Diabolo Boulevard< Lafayette, California.*

[97] Division of Safety of Dams, 2020, Dam Breach Inundation Maps., available online at https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2, accessed November 19, 2020.

[98] Federal Emergency Management Agency (FEMA), 2009, FEMA Flood Insurance Rate Map (FIRM) No. 06013C0269F, June 16, 2009, available online at https://msc.fema.gov/portal/search?AddressQuery=4011%20Mt%20Diablo%20Blvd%2C%20Lafayette%2C%20CA%2094549#searchresultsanchor, accessed October 4, 2020.

[99] Cornerstone Earth Group, September 10, 2019. *Preliminary Geotechnical and Geologic Hazard Investigation Health and Healing Campus Mount Diabolo Boulevard< Lafayette, California.*

[100] Branagh Left Coast Architecture, Cancer Support Community Planning Submittal, March 10, 2020.

PROPOSED CONDITIONS

The proposed drainage for the site includes an internal storm drain network that intercepts runoff from the building, parking lots, roads, and the open space area to the south. The on-site storm drain network includes swales, storm drains and a V-ditch that convey runoff into two on-site bioretention areas. The two bioretention areas at the north edge of the site would drain into an 18-inch storm drain that connects to a catch basin along the south side of Mt. Diablo Boulevard (see Figure 4-2, *Preliminary Stormwater Management Plan*). The City's existing 24-inch storm drain crosses beneath Mt. Diablo Boulevard and eventually discharges to Lafayette Creek. The proposed project would also include permeable concrete for the sidewalk along Mount Diablo Boulevard and result in 32,890 SF of impervious area.[101]

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to hydrology and water quality in Section III. These measures preserve and protect creeks, streams, and other watercourses in their natural state, improve water quality in watercourses, and reduce per capita water consumption within the City of Lafayette.[102]

DISCUSSION

a)

Urban runoff can carry a variety of pollutants, such as oil and grease, metals, sediment and pesticide residues from roadways, parking lots, rooftops, and landscaped areas, which can end up in adjacent waterways via the storm drain system. The proposed project would increase the amount of impervious surface and could create changes to stormwater flows, resulting in a greater potential to introduce pollutants to receiving waters. Construction activities have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

Construction Impacts

Because the project would disturb one or more acres of land during construction, the Applicant would be required to comply with the requirements of the State Water Resources Control Board (SWRCB) Construction General Permit (2009-0009-DWQ) as amended by 2010-0014-DWQ and 2012-0006-DWQ. Under the terms of the permit, applicants must file Permit Registration Documents (PRDs) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site

[101] Branagh Left Coast Architecture, Cancer Support Community Planning Submittal, March 10, 2020.
[102] City of Lafayette, 2002, General Plan – Section III, available online at https://www.lovelafayette.org/Home/ShowDocument?id=1931, accessed November 19, 2020.

map, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website. The SWPPP describes the incorporation of Best Management Practices (BMPs) to control sedimentation, erosion, and hazardous materials contamination of runoff during construction.

Furthermore, the city of Lafayette reviews individual projects for stormwater conformance with applicable laws, policies, and guidelines and has the authority to inspect and conduct sampling at properties to ensure that the provisions of LMC Chapter 5-4, *Storm Water Management and Discharge Control*, are implemented. The City also requires an erosion control plan (ECP) to be submitted and approved by the Engineering Services Division prior to the issuance of grading permits. At a minimum, the ECP must include the following:

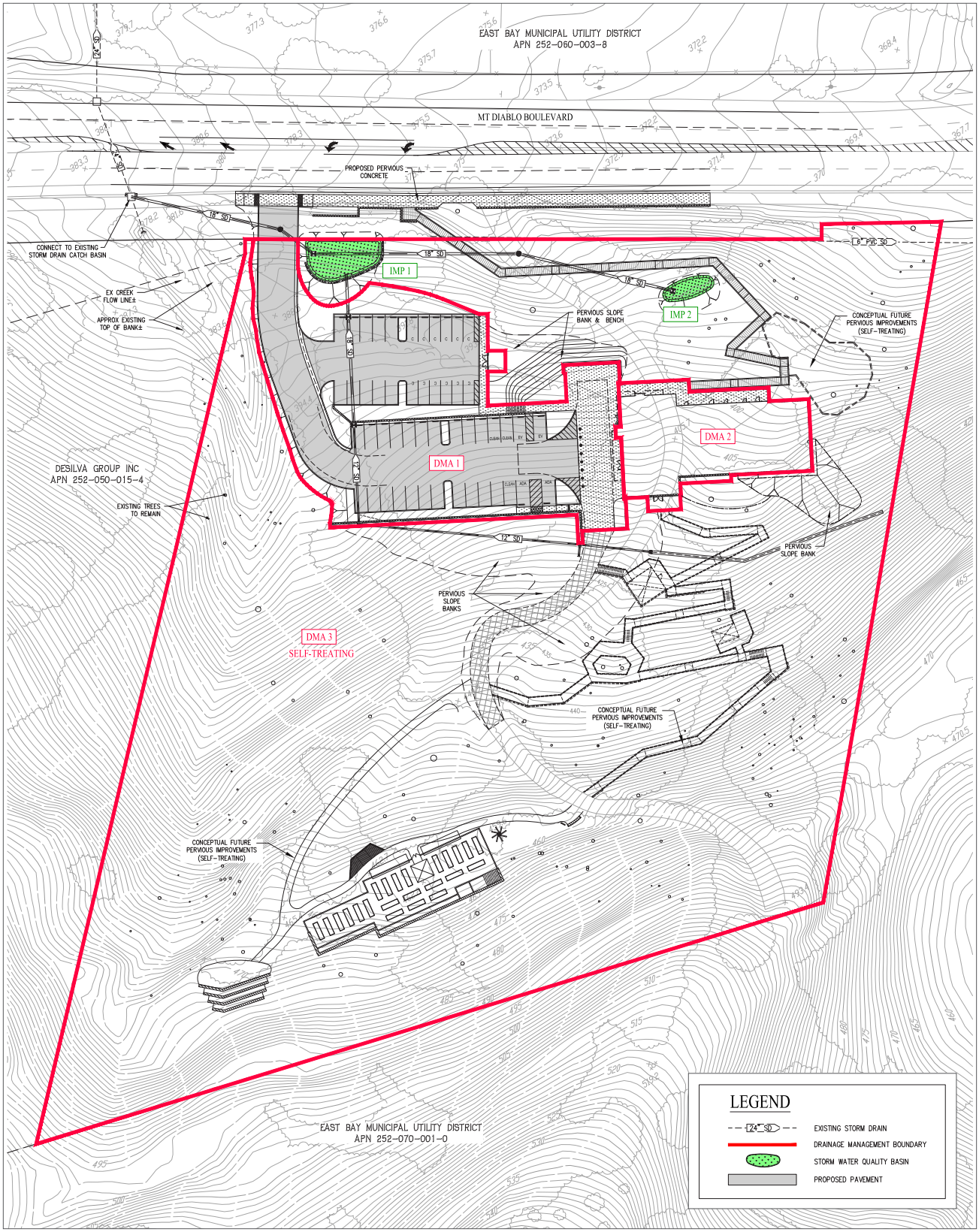
- Proposed schedule of grading activities, monitoring, and infrastructure milestones in chronology
- Identification of critical areas of high erodibility potential and/or unstable slopes
- Contour and spot elevations indicating runoff patterns before and after grading
- Identification of erosion control measures on slopes, lots, and streets. Measures shall be based on recommendations contained in the *Erosion and Sediment Control Field Manual* published by the San Francisco Bay RWQCB
- Soil stabilization techniques such as short-term biodegradable erosion control blankets and hydroseeding should be utilized
- Post-construction inspection of all drainage facilities for accumulated sediment and the cleaning of these drainage structures of debris and sediment.

Compliance with State stormwater regulations requiring preparation of a SWPPP and compliance with the City's erosion and sediment control ordinance and preparation of an ECP would reduce the potential for water quality issues during construction. Therefore, water quality impacts would be *less than significant.*

Operational Impacts

Because the Project will create and/or replace 10,000 square feet or more of impervious surfaces, it must comply with the C.3 requirements of the MRP and a SCP must be submitted to the City that details the site control, source control, and stormwater measures that will be implemented at the site. The SCP must identify potential sources of stormwater pollutants and corresponding BMPs or Low Impact Development (LID) features that reduce impacts for each potential source. A preliminary SCP has been developed that divides the site into three drainage management areas (DMAs).

Two of the DMAs drain to two bioretention areas prior to discharge into the City's storm drain system. The third DMA is self-treating. In addition, the proposed project would include permeable concrete for the sidewalk along Mount Diablo Boulevard. The preliminary design is provided as Figure 4.10-1. The final SCP would include calculations demonstrating that each DMA will meet or exceed the water quality treatment standards per the CCWP's Stormwater C.3 Guidebook and would be submitted to the City for review and approval.



Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 4.10-1
Preliminary Stormwater Control Plan

The project site would also include the source control BMPs shown in Table 4.10-1.

TABLE 4.10-1 SOURCE CONTROL BMPS

POTENTIAL SOURCE OF RUNOFF POLLUTANTS	PERMANENT SOURCE CONTROL BMP'S	Operational Source Control BMP's
Onsite Storm Drain Inlets	Mark all accessible onsite inlets with the words "No Dumping! Flows to Creek" or approved equivalent language. Detail location of all onsite storm drain inlets on Stormwater Control Plan Drawings.	Maintain and periodically replace inlet markings as needed. Provide stormwater pollution prevention information to new site owners, lessees, or operators. Include the following in Declaration of Covenants, Conditions, and Restrictions (CC&Rs) "Tenant shall not discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains." Inlets and pipes conveying stormwater to BMPs shall be inspected and maintained as part of the Project Operation and Maintenance Plan.
Need for future indoor or structural pest control	Project construction drawings shall incorporate features that discourage entry of pests.	Provide Integrated Pest Management (IPM) information to owners, lessees, and operators.
Trash Enclosures (Private Receptacles)	The number, type and size of project trash and recycling bins have been determined adequate by the solid waste purveyor.	Private resident receptacles will be stored within private garages until collection day as stated in the CC&Rs.
Landscape/outdoor pesticide use	Final project landscape plans reflect the following: Design that minimizes need for irrigation; minimizes runoff; promotes surface infiltration where appropriate; and details the use of planting material that minimizes the amount of fertilizers and pesticides that are needed. Where landscaped areas are used to retain and detain stormwater, project landscape plans specify the use of plants that are tolerant of saturated soil conditions. Project landscape plans detail use of plantings appropriate to site soils, slopes, climate, sun land use, air movement, ecological consistency, and plant interactions. Detail locations of stormwater treatment BMPs on Stormwater Control Plan Drawings.	Maintain landscaping using minimum or no pesticides. Provide Integrated Pest Management information to new owners, lessees and operators. See applicable BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks www.babmphandbooks.com
Roofing, gutters, and trim	Do not utilize roofing, gutter, or architectural trim materials made of copper or other unprotected metals that would leach into the storm water runoff.	
Private Drive and Sidewalks		Owners, lessees, and operators will be encouraged to sweep sidewalks regularly to prevent the accumulation of litter and debris. Debris from

POTENTIAL SOURCE OF RUNOFF POLLUTANTS	PERMANENT SOURCE CONTROL BMP'S	Operational Source Control BMP's
		pressure washing shall be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.
Fire Sprinkler Test Water	Provide means to drain fire sprinkler test water to sanitary sewer system.	See note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Air Conditioning	Air conditioner condensation shall be directed to landscaped areas or plumbed to the sanitary sewer.	

Carlson, Barbee, and Gibson, January 28, 2020, *Preliminary Stormwater Control Plan*.

In addition, a Storm Water Control Operation and Maintenance (O&M) Plan must be submitted to the City for review and approval and an Operation and Maintenance Agreement must be recorded prior to issuance of a building permit. The property owner must include in the O&M Plan how the maintenance costs would be funded to ensure that the BMP features would be maintained in perpetuity.

The proposed project would also have to abide by the requirements of Chapter 3-7 and Chapter 5-4 of the City's Municipal Code. Additionally, the City's General Plan includes policies OS 6.1 and OS 7.1 that aim to reduce watercourse pollution and control soil erosion.

Collectively, the treatment and source control BMPs, in addition to the requirements of the City and County regulations would mitigate and minimize pollutants of concern from the operational phase of the proposed project. Additionally, through the development review process, the City would ensure that the proposed project complies with various statutory requirements necessary to achieve regional water quality objectives and protect groundwater and surface waters from pollution by contaminated stormwater runoff. With implementation of these measures, the potential operational impact to water quality would be *less than significant.*

b)

The project will have an impact on groundwater if implementation causes a substantial decrease in groundwater supplies or interferes substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. The City of Lafayette and the project site are not located within a groundwater basin, as identified by the San Francisco RWQCB. Therefore, the project could not impede sustainable groundwater management of the basin. Furthermore, the use of stormwater treatment measures, as per the C.3 provisions of the MRP, will reduce the impact of an increase in impervious surfaces on groundwater recharge. Also, construction dewatering will not be required for this project since groundwater is anticipated to be at least 50 feet below ground surface (bgs).

Implementation of the proposed project would result in an increase in water demand as compared to existing conditions, as discussed in further detail in Section XVI, *Utilities and Service Systems*. However, groundwater is not used for municipal supply in the City of Lafayette. The EBMUD would provide potable water for the proposed project and does not use groundwater to meet its water demand. The EBMUD's water supply comes principally from surface water and the Mokelumne River. Since the proposed project would not develop or use groundwater supplies, implementation of the project would have a *less than significant* impact on groundwater supplies.

c. i) through iv)

Erosion and Siltation

The project site lies within the Las Trampas Creek Watershed. A seasonal drainage ravine is located along the western edge of the site and Lafayette Creek is approximately 250 feet north of the project. The existing site drains into the seasonal ravine and nearby catch basin. The proposed drainage from the site would mimic existing conditions as the on-site bioretention areas would drain into an 18-inch storm drain that would discharge into the existing catch basin northwest of the project site and along the south side Mt. Diablo Boulevard. This catch basin connects to the City's existing 24-inch storm drain and eventually discharges into Lafayette Creek. The seasonal natural drainage feature along the west side of the project site would remain in its current configuration with development of the site. Therefore, the proposed project would not involve the alteration of any watercourse, stream or river.

As previously discussed in impact X.a above, standard erosion and sediment control BMPs are required and would be implemented as part of the SWPPP for the proposed project to minimize the potential for erosion or siltation during construction. The SWPPP must include erosion control measures such as phasing of grading, limiting areas of disturbance, designation of restricted-entry zones, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection, and provisions for re-vegetation or mulching. The BMPs would also include treatment measures to trap sediment once it has been mobilized, including inlet protection, straw bale barriers, straw mulching, straw wattles, silt fencing, check dams, terracing, and siltation or sediment ponds. The project applicant must also prepare and submit an Erosion Control Plan to the City for review and approval prior to the issuance of a grading permit.

Once constructed, the site design measures, source control measures, and stormwater treatment measures outlined in the SCP will address stormwater runoff during operation of the proposed project with the construction of the permeable concrete sidewalk and bioretention areas which will slow the rate of stormwater runoff from the site and reduce the potential for erosion and siltation in the adjacent catch basin.

The proposed project would also adhere to the requirements of Chapter 3-7, Grading, and Chapter 5-4, Stormwater Management and Discharge Control, of the City's Municipal Code. Additionally, the City's General Plan includes policies OS 6.1 and OS 7.1 that aim to reduce watercourse pollution and control soil erosion.

With implementation of these erosion and sediment control measures, the proposed project would not result in significant increases in erosion and siltation and impacts would be less than significant.

Flooding

The proposed project would result in a decrease in pervious surfaces which could potentially increase the rate of surface runoff. The preliminary SCP describes the onsite bioretention areas that meet the treatment and flow control requirements of the MRP, as specified in the CCCWP Stormwater C.3 Guidebook. Additionally, the City's General Plan Policy S-3.1 and Program items S-3.1.1, S-3.1.2, and S-3.1.3 describe measures to reduce flood hazards by maintaining post development peak runoff rates and stormwater volumes similar to predevelopment conditions, to the maximum extent feasible. With the construction of the on-site bioretention areas, the proposed project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site and impacts would be *less than significant*.

Stormwater Drainage System

The proposed project would include site design and treatment control measures that are sized to limit runoff from the site, in accordance with the CCCWP Stormwater C.3 Guidebook. As previously discussed in impact X.a, the project would include preparation and implementation of a SCP that would detail the design and construction of the bioretention areas, which would reduce peak runoff rates from the site. The proposed bioretention areas would control runoff associated with impervious surfaces and reduce the potential for exceedance of existing drainage capacity. In addition, the implementation of stormwater treatment measures would reduce the potential for polluted runoff.

Adherence to the requirements of the Construction General Permit (CGP) and the City's Municipal Code, in addition to implementation of the SCP, would ensure runoff generated from the proposed development would not exceed the capacity of the existing storm drainage system or result in additional sources of polluted runoff, and impacts would be *less than significant* impact.

Flood Flows

The project site is not located in a FEMA-designated 100-year floodplain or Special Flood Hazard Area. Therefore, implementation of the project would not impede or redirect flood flows associated with flooding in a 100-year floodplain. However, a small portion of the northern boundary of the site, fronting Mt. Diablo Boulevard, is within the dam inundation zone of the Lafayette Reservoir. No structures or development are planned within this area of the site.

When an earthquake passes through an area, a seismic seiche may occur which are standing waves set upon inland bodies of water.[103] Because the inundation zone for a seiche would be much smaller than the dam inundation zone for Lafayette Reservoir, no flooding would occur on the project site due to a seiche.

[103] U.S. Geological Survey, 2020, Seismic Seiches, available online at https://www.usgs.gov/natural-hazards/earthquake-hazards/science/seismic-seiches?qt-science_center_objects=0#qt-science_center_objects, accessed December 7, 2020.

There are no other large bodies of water in the vicinity of the site, Therefore, there is no risk of inundation due to seiches. Additionally, the City of Lafayette is more than 10 miles inland from San Francisco Bay and there is no potential for damage from tsunamis at the site. Therefore, implementation of the project would not impede or alter flood waters and impacts would be *less than significant*.

d)

As discussed in impact X.c, the project site is not located in a FEMA-designated 100-year floodplain or Special Flood Hazard Area and a small portion of the site is within the dam inundation zone of the Lafayette Reservoir. However, no structures are proposed within the dam inundation area.

A seiche is an oscillating surface wave in a restricted or enclosed body of water, generated by ground motion, usually during an earthquake. Seiches are of concern for water storage facilities, because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water.[104] A seiche would produce a much smaller inundation zone than that of a dam failure. Because the dam failure inundation zone for Lafayette Reservoir barely extends onto the northern portion of the site, the inundation zone from a seiche would not extend onto the site. Therefore, the project is not at risk of inundation by seiche.

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. As the City of Lafayette is located approximately 10 miles from the San Francisco Bay, the project site is not in an area subject to inundation by tsunamis and there would be no impact.

Therefore, impacts due to the release of pollutants from these three potential types of natural hazard events are *less than significant*.

e)

The proposed project is not located within a designated groundwater basin, as identified by the San Francisco RWQCB, and is not governed by a sustainable groundwater management plan.

The San Francisco Bay RWQCB monitors surface water quality through implementation of the Water Quality Control Plan for the San Francisco Bay Basin, also referred to as the “Basin Plan”. The Basin Plan designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives.

As required by the CCCWP’s Stormwater C.3 Guidebook, the CGP, and the City’s Municipal Code, BMPs would be implemented at the project site during construction and operation of the proposed project. These measures would control and prevent the release of sediment, debris, and other pollutants into the drainage system. Implementation of BMPs during construction would be in accordance with the provisions of the SWPPP, which would minimize the release of sediment, soil, and other pollutants.

[104] U.S. Geological Survey, 2020, Seismic Seiches, available online at https://www.usgs.gov/natural-hazards/earthquake-hazards/science/seismic-seiches?qt-science_center_objects=0#qt-science_center_objects, accessed December 7, 2020.

Operational BMPs, as outlined in the SCP, would be implemented for stormwater control. These BMPs will include self-treating areas and bioretention areas that treat and control runoff before it enters the regional drainage system. These BMPs would also improve water quality by the settling out of silt particles.

With implementation of these BMPs, the proposed project would not conflict with or obstruct the implementation of the Basin Plan, and potential impacts on water quality would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

XI. LAND USE AND PLANNING

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Physically divide an established community?	❒	❒	■	❒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	❒	❒	■	❒

EXISTING CONDITIONS

The project site is bounded by Mt. Diablo Boulevard, a major thoroughfare from west Lafayette to Downtown Lafayette to the north, undeveloped land to the west, and an EBMUD easement to the south and east. Land uses on the other side of Mt. Diablo Boulevard include a community garden, an outdoor learning center, and a Christmas tree farm. The project is located within a low-density area of the city and is surrounded by open space, community facilities, agriculture, and recreational land uses.

Development of the proposed project would result in a campus for the cancer support community to include an 11,000 square foot building, two small parking lots, an outdoor gathering space, a boardwalk, a greenhouse, and an amphitheater or outdoor movement space. The project site consists of one 5.75-acre applicant-owned parcel that is currently undeveloped. The existing site would require site grading and excavation under the proposed project.

The project site has a General Plan land use designation of Rural Residential Single Family and is within the LR-10 Zoning district. Both the General Plan land use and zoning designation do not explicitly state a height limit for the project site but support preservation of prominent views by limiting the height of development when necessary. Commercial development in Lafayette limits height to a maximum of 35 feet, or three stories, and the maximum height of the proposed project is within these limits at 29.7 feet. The land use and zoning designation generally allow a variety of low-density, community-oriented or residential uses, provided that development blends into the natural environment and has minimal impacts on development density.

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to hydrology and water quality in Chapter I. The land use chapter includes designations and standards for developments for residential and commercial uses, public facilities and public utilities, and for the protection of natural areas. The goals, policies, and programs seek to ensure that development in the City of Lafayette is harmonious with the natural environment and existing neighborhoods, as well as accommodating to future development.[105]

[105] City of Lafayette, 2002, General Plan – Chapter I, available online at https://www.lovelafayette.org/Home/ShowDocument?id=1933, accessed November 19, 2020.

DISCUSSION

a)

The physical division of an established community typically refers to the construction of a physical feature (such as a wall, interstate highway, or railroad tracks) or the removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. An example of a physical feature that would divide an existing community is an airport, roadway, or railroad track through an existing community that could constrain travel from one side of the community to another or impair travel to areas outside of the community.

As described above, the project site is surrounded by undeveloped land and a major thoroughfare to Downtown Lafayette. The proposed project would not disrupt or divide the physical arrangement of an existing community or impair the mobility within or between an existing community and outlying areas. Rather, the current project would blend into the existing hillside and other nearby land uses supportive of preserving scenic views and natural hillside character. Therefore, the proposed project would have a *less than significant* impact.

b)

As shown in Figure 3-4 in Chapter 3, Project Description, of this Initial Study, the partially improved project site is currently designated as Rural Residential Single Family in the Lafayette General Plan. This land use designation is intended to retain hillsides in a nearly natural condition as is feasible while allowing development which is subordinate to and supportive of preserving scenic views and the natural hillside character of the area. Uses within the Rural Residential Single-Family land use designation generally support houses sited to blend into the natural environment and have minimal impacts on it with development density not exceeding 0.1 dwelling units per acre.

The current zoning designation for the project site is LR-10 zoning district which establishes a minimum lot size of 10 acres for newly created parcels. The subject parcel is less than the required 10 acres in size; however, it was established prior to being rezoned with the LR-10 designation. This zoning designation does not contain a Floor Area Ratio requirement or a lot coverage limit. Per the LMC Section 6-720, the uses permitted in the LR-10 zoning district include a variety of uses such as single-family residences and accessory structures, keeping of livestock, small farming, home occupation, second units, animal farming, and supportive care. Conditional uses requiring a permit include a community building or club, whether or not operated for profit; a residential business; religious institutions; publicly owned buildings and structures; horticulture or similar agriculture uses; horse riding schools; kennels; recreation courts; or uses approved as comparable by the Planning Commission. Pursuant to LMC Section 6-720, new development requires the issuance of a hillside development permit. In addition, the maximum height limit shall not exceed 30 feet in height or two and one-half stories, whichever is less, and each building shall be at least 50 feet from the property line or easement lines. The project site is also within a ridgeline setback area.

As described above, the proposed project would include a 12,009 square foot community building, two small parking lots (containing a total of 50 parking spaces), an outdoor gathering space, a boardwalk, a

greenhouse, and an amphitheater or outdoor movement space. The General Plan does not contain a land use designation that explicitly allows community-supportive campuses, as proposed by the project, despite potential positive impacts that would result from this land use. While the project does not propose residential uses explicitly consistent with the project site's General Plan land use designation, the project proposes similar low-density development, both in scale and lot coverage, with beneficial community-oriented project components.

The proposed project would reach a maximum building height of 29.7 feet and two stories. Therefore, the building height complies with the maximum height limits of 30 feet. The existing project site would require site grading and excavation under the proposed project, necessitating a hillside development permit. Review by the City of Lafayette Building Department prior to issuance of the required hillside development permit would ensure that the proposed project retains hillsides in a nearly natural condition as is feasible. In addition, the proposed project would not construct dwelling units, and it would therefore not affect the existing density allowed under the land use designation. For these reasons, the proposed project is in compliance with the Lafayette General Plan and the Lafayette Zoning Code regulations and impacts would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

XII. MINERAL RESOURCES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Result in the loss of availability of a known mineral resource that would be a 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?	❒	❒	❒	■

EXISTING CONDITIONS

The California State Department of Conservation Division of Mine and Geology has "designated" sites in Contra Costa County as having significant mineral resources in the County. The Countywide General Plan for Contra Costa includes mapped locations of the designated sites, of which the City of Lafayette is not within one of the mineral resource preservation sites.[106]

DISCUSSION

a), b)

None of the "designated" sites for which significant mineral resources have been identified is within the City of Lafayette. The proposed project would not result in a loss of resources or an important mineral resource recovery site. Therefore, mineral resources would not be impacted by the proposed project because none have been identified on site or within the nearby vicinity.

MITIGATION MEASURES

None required.

[106] Contra Costa County, 2005, Countywide General Plan, available online at https://www.contracosta.ca.gov/4732/General-Plan, accessed March 19, 2020.

XIII. NOISE

Would the proposed project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	❒	❒	■	❒
b) Generation of excessive groundborne vibration or groundborne noise levels?	❒	❒	■	❒
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 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?	❒	❒	❒	■

EXISTING CONDITIONS

Environmental Setting

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal, state, and city governments have established criteria to protect public health and safety and to prevent the disruption of certain human activities, such as classroom instruction, communication, or sleep. Additional information on noise and vibration fundamentals and applicable regulations are contained in Appendix E.

Existing Noise Environment

The project site is an undeveloped parcel of land located off Mt. Diablo Boulevard approximately 750 feet south of SR-24. The project site is surrounded by open space and an outdoor recreational area. The General Plan traffic noise contours show the proposed project site to be within the 65 dBA CNEL noise contour. This noise evaluation was prepared in accordance with the requirements of CEQA to determine if the proposed project would result in significant construction and operational impacts at nearby sensitive receptors. Per California Building Industry Association v. Bay Area Air Quality Management District, 62 Cal. 4th 369 (No. S 213478) (CBIA v. BAAQMD), noise compatibility for onsite sensitive receptors is no longer the purview of the CEQA. However, the City requires that projects are designed to achieve the interior noise standards of Title 24, including the noise insulation requirements of the California Green Building Standards Code (CALGreen).

Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. These uses include residences, schools, hospital facilities, houses of worship, and open space/recreation areas where quiet environments are necessary for the enjoyment, public health, and safety of the community. The nearest sensitive receptors to the site are the Lafayette Community Garden to the north across Mt. Diablo Boulevard and the adjacent Lafayette Reservoir Recreational Area. In addition, the nearest residences are located approximately 1,000 feet to the east and the Contra Costa Jewish Day School located approximately 1,050 feet to the northeast.

REGULATORY SETTING

City of Lafayette Municipal Code

Chapter 5-2, *Noise,* of the Lafayette Municipal Code establishes maximum permissible exterior nose levels by receiving land use. These noise levels are summarized in Table 4.13-1.

TABLE 4.13-1 OUTDOOR NOISE LIMITS

RECEIVING LAND USE	TIME/PERIOD	NOISE LIMIT STANDARDS, DBA
Single-Family	10:00 pm to 7:00 am	45
	7:00 am to 10:00 pm	50
Multi-family, schools, libraries, public spaces	10:00 pm to 7:00 am	50
	7:00 am to 10:00 pm	55
Commercial	10:00 pm to 7:00 am	55
	7:00 am to 10:00 pm	60

Source: City of Lafayette Municipal Code, Section 5-205.
Notes:
Noise shall not exceed:
- The noise standard for a cumulative period of more than 30 minutes in any hour (L_{50}); or
- The noise standard plus 5 dB for a cumulative period of more than 15 minutes in any hour (L_{25}); or
- The noise standard plus 10 dB for a cumulative period of more than 5 minutes in any hour (L_8); or
- The noise standard plus 15 dB for a cumulative period of more than 1 minute in any hour (L_2); or
- The noise standard plus 20 dB for any period of time (L_{max}).

In the event the alleged offensive noise contains a steady, audible tone such as a whine, screech or hum, or is an impulsive noise such as hammering, or contains music or speech conveying informational content, the standard limits shall be reduced by 5 dB.

Under Section 5-207, *Prohibited Acts,* of the Municipal Code, air conditioning, and air handling equipment installed after 1978 shall not exceed:

- 45 dBA at any point on neighboring residential property line, 5 feet above grade level no closer than 3 feet from any wall;
- 40 dBA at the center of neighboring patio, 5 feet above grade level, no closer than 3 feet from any wall;
- 40 dBA outside the neighboring living area window nearest the equipment location, not more than 3 feet from the window or at 50 feet from equipment from the equipment if located further.

- 55 dBA at any commercial zone;
- 55 dBA at any residential zone.

Construction

Under Section 5-207, *Prohibited Acts,* of the Municipal Code, construction including demolition work is prohibited weekdays 10:00 pm to 7:00 am or any time Sundays or holidays, such that the sound level creates a noise disturbance across a residential or commercial property line. The exterior noise limits summarized in Table 4.13-1 would apply to construction activity during the nighttime hours of 10:00 pm to 7:00 am. As discussed in the project description, the proposed project construction would not occur during the hours of 10:00 pm to 7:00 am.

DISCUSSION

a)

Construction Vehicles

The transport of workers and materials to and from the construction site would incrementally increase noise levels along local site access roadways. Individual construction vehicle pass-bys and haul trucks may create momentary noise levels of up to approximately 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be infrequent and short lived. Construction related worker, vendor, and haul trips are anticipated to be a fraction of the existing average daily traffic (ADT) volumes along Mt. Diablo Boulevard. This would be less-than-significant impact.

Construction Equipment

Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Each phase of construction involves the use of different kinds of construction equipment and therefore has its own distinct noise characteristics. Noise levels from construction activities are dominated by the loudest piece of construction equipment. The dominant noise source is typically the engine, although work piece noise (such as dropping of materials) can also be noticeable.

Construction activities associated with the proposed project would not require blasting or pile driving. Construction noise quite often exhibits a high degree of variability because factors such as noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase result in different noise levels at a given sensitive receptor. Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels in excess of 80 dBA at 50 feet. Since noise from construction equipment is intermittent and diminishes at a rate of 6 dBA per doubling distance, the average noise levels at noise-sensitive receptors would be lower, because mobile construction equipment would move around the site with different loads and power requirements.

The proposed project's loudest construction activity is associated with activity phases such as grading, building construction, and paving. Typical equipment for these activities would include, but is not limited to, graders, pavers, paving equipment, vibratory rollers, cranes, and trucks. Table 4.13-2 lists typical construction equipment noise levels at a distance of 50 feet between the equipment and noise receptor. Pile driving is not anticipated to construct the proposed project.

The City of Lafayette does not have any established threshold for temporary construction noise during daytime hours. Therefore, for the purpose of this analysis, criteria set by the Federal Transit Administration[107] is used to evaluate potential temporary construction noise impacts. Based on FTA's guidance, a significant impact would occur if construction would exceed 80 dBA Leq at the receiving sensitive receptor property line.

Table 4.13-2 below shows noise levels would range from 76 dBA Leq to 88 dBA Leq at a distance for 50 feet. The nearest sensitive receptors to the project site are the Lafayette Community Garden to the north and the surrounding adjacent Lafayette Reservoir recreation area. Construction noise is determined by measuring the distance from the center of construction site (i.e., from the acoustical center of the general construction site) to the receptor property line. The acoustical center is used to determine an average noise level to correlate with the Leq (average noise level) metric.[108]

The adjacent recreational Lafayette Reservoir is approximately 220 feet from the acoustical center of the site and the Lafayette Community Garden is approximately 320 feet from the acoustical center of the site. At that distance noise levels would attenuate to approximately 75 and 73 dBA Leq or less, respectively. Therefore, construction noise levels would be below the 80 dBA Leq threshold and impacts due to temporary project-related construction would be *less than significant*.

[107] Federal Transit Administration. September 2018. Transit Noise and Vibration Impact Assessment Manual.
[108] Acoustical center is determined by available grading site plan.

TABLE 4.13-2 CONSTRUCTION EQUIPMENT NOISE LEVEL EMISSIONS, DBA LEQ

Equipment	Typical Noise Level at 50 Feet	Equipment	Typical Noise Level at 50 Feet
Air Compressor	80	Loader	80
Backhoe	80	Paver	85
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pneumatic Tool	85
Compactor	82	Pump	77
Concrete Mixer	85	Roller	85
Concrete Pump	82	Saw	76
Concrete Vibrator	76	Scarifier	83
Crane, Derrick	88	Scraper	85
Crane, Mobile	83	Shovel	82
Dozer	85	Spike Driver	77
Generator	82	Tie Cutter	84
Grader	85	Tie Handler	80
Impact Wrench	85	Tie Inserter	85
Jack Hammer	88	Truck	84

Source: Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual*. September.

Traffic Noise

Noise can be divided into three categories: audible, potentially audible, inaudible. “Audible” refers to increases in noise level that are perceptible to humans. Audible increases generally refer to a change of 3 dBA or more since this level has been found to be the threshold of perceptibility in exterior environments. “Potentially audible” refers to a change in noise level between 1 and 3 dBA. Changes in noise level of less than 1 dBA are typically “inaudible” to the humans except under quiet conditions in controlled environments. For the purposes of this analysis, a traffic noise increase impact is considered significant if sensitive receptors experience project-related traffic noise increases:

Greater than 1.5 dBA increase for ambient noise environments of 65 dBA CNEL and higher;

Greater than 3 dBA increase for ambient noise environments of 60–64 CNEL; and

Greater than 5 dBA increase for ambient noise environments of less than 60 dBA CNEL.

To determine the traffic noise level increase due to the project, existing ADT volumes were compared to the existing plus project ADT volumes. The existing ADT volumes along Mt. Diablo Boulevard were obtained from the City’s website. According to the City’s website, existing ADT on Mt. Diablo Boulevard

west of Lafayette Circle is 6,807.[109] The proposed project would generate up to 107 daily trips.[110] This would result in project-related traffic noise increase of approximately 0.1 dBA or less. Therefore, this impact would be *less than significant*.

Stationary Noise

Mechanical Equipment

The proposed project would generate stationary source noise associated with heating, ventilation, and air conditioning (HVAC) units. HVAC equipment typically generates noise levels of approximately 72 dBA at a distance of 3 feet. The nearest sensitive receptor to the proposed building is the Lafayette Community Garden to the northwest at an approximate distance of 250 feet, across Mt. Diablo Boulevard. At that distance noise levels would attenuate to approximately 34 dBA. Therefore, mechanical equipment noise levels would not exceed the Municipal Code standards of 55/50 dBA (daytime/night hours). Therefore, this impact would be *less than significant*.

Outdoor Recreational Areas

The project proposes an outdoor amphitheater, a vegetable garden, and a playground. These outdoor uses would not include amplified speech or music. Noise generated by the outdoor uses would result primarily from people talking and interacting with one another. For reference, a typical conversation between to people at a distance of 6 feet, using a normal voice level is approximately 54 dBA.[111] The nearest sensitive receptors to these outdoor uses would be the nearby trails associated with the Lafayette Reservoir to the east, south and west. The nearest trails are approximately 65 feet from the nearest proposed outdoor use area. At that distance, speech-related noise would attenuate to approximately 33 dBA. Outdoor recreational noise levels would not exceed the Municipal Code standards of 55/50 dBA (daytime/night hours). Therefore, this impact would be *less than significant*.

b)

Operational Vibration (Long-Term)

The operation of the proposed project would not include any substantial long-term vibration sources (e.g., subways and rail or industrial operations). Thus, no significant vibration effects from operational sources would occur.

[109] Lafayette, City of. September 2013 Downtown Mt Diablo & Moraga Road Corridor Counts. https://www.lovelafayette.org/city-hall/city-departments/engineering/transportation/traffic-counts

[110] Trip generation provided by Fehr & Peers. See Appendix F.

[111] Engineering ToolBox, (2005). *Voice Level at Distance*. Accessed November 3, 2020. https://www.engineeringtoolbox.com/voice-level-d_938.html

Construction Vibration Impacts (Short–Term)

Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with construction-related activities. Construction on the project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibration from construction activities rarely reach levels that damage structures.

Table 4.13-3 identifies vibration levels for typical construction equipment at a reference distance of 25 feet. A potential impact would occur if vibration levels would exceed 0.2 inches per second peak particle velocity (in/sec PPV) at the façade of a sensitive receptor (structure). As shown in Table 4.13-3, vibration from construction equipment would attenuate to below 0.2 in/sec beyond a distance of approximately 25 feet. There are no nearby sensitive receptors within 25 feet of the proposed project. The closest structure is approximately 170 feet to the north across Mt. Diablo Boulevard. At that distance, vibration levels would attenuate well below 0.2 in/sec PPV. Therefore, this impact would be *less than significant*.

TABLE 4.13-3 CONSTRUCTION EQUIPMENT VIBRATION LEVELS FOR ARCHITECTURAL DAMAGE

Equipment	Approximate PPV at 25 feet (inches per second)	Approximate PPV at 30 feet (inches per second)
Vibratory Roller	0.21	0.16
Hoe Ram	0.089	0.068
Large Bulldozer	0.089	0.068
Caisson Drilling	0.089	0.068
Loaded Trucks	0.076	0.058
Jackhammer	0.035	0.027
Small Bulldozer	0.003	0.002

Note: PPV = peak particle velocity
Source: Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual*. September.

c)

The nearest airport is the Buchanan Field Airport, approximately 8.7 miles northeast of the project site.[112] Implementation of the project would not result in exposure of people residing or working in the project area to excessive airport-related noise. There would be *no impact*.

[112] Airnav, LLC. 2020. Airport Information. Accessed November 4, 2020. http://www.airnav.com/airports.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

XIV. PARKS AND RECREATION

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
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?	❒	❒	■	❒

EXISTING CONDITIONS

Lafayette has a 29-mile network of community trails linking neighborhoods and feeding into the regional and Lamorinda trail networks.[113] Within the city limits there are 91.3 acres of recreational space and parkland, comprised of four neighborhood parks, two community parks, one downtown park, and a community center.[114] The City of Lafayette is also surrounded by three regional park facilities- Lafayette Reservoir Recreation Area, Briones Regional Park, and Las Trampas Regional Wilderness.[115]

Community spaces in downtown Lafayette include Brook Street Park, the Gazebo, Lafayette Elementary School, Lafayette Library and Learning Center, and Lafayette Plaza. Brook Street Park consists of a small play area for children and neighborhood picnic facilities. The Gazebo is a public facility surrounded by landscaping, and it serves as a point of interest on Mt. Diablo Boulevard. Lafayette Elementary School provides community space for active recreational uses and community gatherings. The Lafayette Library and Learning Center has four outdoor spaces, including plazas, a reading court, and an amphitheater. Lafayette Plaza is located in the core of the downtown and is used for community gatherings, concerts, and festivals.

There are currently 3.4 acres[116] of parkland per 1,000 residents of Lafayette, which does not meet the standard of 5 acres per 1,000 residents established in the General Plan. City-owned playing fields, located at the Lafayette Community Center and Buckeye Fields, are used to capacity by youth leagues and demand is increasing.

Parks acquisitions and improvements are funded primarily through regional bond measures and impact fees levied on new development in Lafayette. East Bay Regional Park District (EBRPD) Bond Measure WW, an extension of Measure AA (1988), is a $500 million bond initiative passed by Alameda and Contra Costa County voters in November 2008 to preserve thousands of acres of open space and expand regional parks

[113] City of Lafayette, http://www.lovelafayette.org/visitors/trails, accessed on October 9, 2020.

[114] City of Lafayette, 2009, Lafayette Parks and Recreation Facilities Master Plan, page 9, available online at https://www.lovelafayette.org/home/showdocument?id=2281, accessed October 8, 2020.

[115] City of Lafayette, 2009, Lafayette Parks and Recreation Facilities Master Plan, page IV-1, available online at https://www.lovelafayette.org/home/showdocument?id=2281, accessed October 8, 2020.

[116] (91.3 acres of parkland/26,638 citywide population) x 1,000 = 3.43 acres per 1,000 residents.

and trails.[117] The City has two impact fees related to parks and both types of fees are levied on new residential development and additions, which would result in an increase in the resident population.[118] However, because the proposed project does not result in an increased resident population, these fees would not be applicable to the proposed project.

Schools play an important function as recreational facilities, but their primary function is education. As such, the schools may provide limited public access to swimming pools, gymnasiums, and other facilities. There are six public schools in two school districts in Lafayette as described in Section XIII, Public Services, above. Lafayette School District includes Burton Valley, Happy Valley, Lafayette, Springhill Elementary School, and Stanley Middle School. Lafayette Elementary School provides community space for active recreational uses and community gatherings. Acalanes High School which includes a major swim center is in the Acalanes Unified High School District. There are also three private schools serving elementary and high school students in Lafayette, each with various private recreation facilities.[119]

While school recreation facilities are not counted as part of the Lafayette park system, youth sports leagues often have agreements with schools for the use of their fields. The Lafayette-Moraga Youth Association (LMYA) is a private non-profit all-volunteer organization that provides year-round athletic programs for all school age youth in Lafayette and Moraga. These sports programs serve over 5,000 children in soccer, basketball, swimming, softball, and volleyball. The Lafayette School District has a steering committee currently working with a consultant on a Master Plan for more efficient use and maintenance of playing fields.[120]

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to parks and recreational facilities in Chapter IV. This chapter addresses the City's existing and future requirements for parks, trails and recreation facilities. The chapter emphasizes coordination with other jurisdictions, namely, the East Bay Municipal Utility District (EBMUD), the East Bay Regional Park District (EBRPD), along with City programs to achieve a high quality of City facilities.[121]

[117] East Bay Regional Park District (EBRPD), 2018, Measure WW, available online at https://www.ebparks.org/about/planning/ww/default.htm, accessed on October 9, 2020.

[118] City of Lafayette, Planning and Development Fees, https://www.lovelafayette.org/home/showdocument?id=499, accessed on October 3, 2020.

[119] City of Lafayette, 2009, Lafayette Parks and Recreation Facilities Master Plan, page 29, available online at https://www.lovelafayette.org/home/showdocument?id=2281, accessed October 8, 2020.

[120] City of Lafayette, 2009, Lafayette Parks and Recreation Facilities Master Plan, page 29, , available online at https://www.lovelafayette.org/home/showdocument?id=2281, accessed October 8, 2020.

[121] City of Lafayette, 2002, General Plan – Chapter IV, available online at https://www.lovelafayette.org/Home/ShowDocument?id=1930, accessed November 19, 2020.

DISCUSSION

a)

The proposed project does not include development of new commercial or residential developments that would increase population and would not increase the demand for parks in the project area. Construction of the Cancer Support Community would take place over a maximum period of 28 months and would require a workforce of construction personnel working throughout this time. Some construction workers may use local park facilities during project construction; however, the increased use would be temporary and minimal and is not anticipated to contribute substantially to the physical deterioration of existing Citywide facilities. Therefore, there would be *no impact*.

b)

The proposed project would include recreational facilities onsite to serve visitors to the facility. Potential environmental impacts associated with the proposed project are addressed in each environmental topic area in this IS, and all impacts were reduced to a level of less than significant, some with mitigation measures. Therefore, impacts would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

XV. POPULATION AND HOUSING

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Induce substantial unplanned population growth or growth for which inadequate planning has occurred, 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 people or housing, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	■

EXISTING CONDITIONS

According to the US Census Bureau's decennial data, the City of Lafayette had approximately 9,407 households and 26,638 residents in 2019.[122] The estimated average household size in 2019 was 2.69 persons, decreasing to 2.68 in 2020. The estimated vacancy rate in 2019 for Lafayette housing units was 5.3 percent and continued similarly into 2020. This pattern coincides with the Contra Costa County's vacancy rate in 2020 at 5.3 percent.[123] In 2019, approximately 72 percent of housing units were occupied by owners and the remainder were renter occupied.[124]

The project site is currently undeveloped and no housing units, commercial office buildings, or residents currently exist on the project site.

DISCUSSION

a)

The proposed project is intended as a replacement for the existing Cancer Support Community at its current site in the City of Pleasant Hill. Therefore, the proposed project in the City of Lafayette would constitute a relocation of activities from the existing site, as opposed to a new activity center. Although the new facility will be larger than the current facility (approximately 12,009 square feet as compared to 7,700 square feet at the current facility), it is anticipated that the new facility is not intended to host more classes or programs.[125] Additionally, it would not serve larger numbers of people needing services than the current facility because the program space would be similar and the majority of the additional space

[122] US Census Bureau, 2019, QuickFacts, https://www.census.gov/quickfacts/lafayettecitycalifornia, accessed on October 8, 2020.

[123] California Department of Finance, 2020, E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011- 2020, http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/documents/E-5_2020_Internet_Version.xlsx, accessed on October 9, 2020.

[124] US Census Bureau, 2019, QuickFacts, https://www.census.gov/quickfacts/lafayettecitycalifornia, accessed on October 8, 2020.

[125] Conversations with City Planner and Client.

would be considered a gathering area intended to promote social interactions before and after events. Therefore, the primary effect of the project is to relocate the existing activities within Contra Costa County, from the City of Pleasant Hill to the City of Lafayette. In light of this, there would be no direct population growth induced by the project, as it would simply replace an existing service.

During the construction period, the proposed project would provide short-term jobs for a construction labor workforce. It is not anticipated that construction needs would result in workers relocating to the area. Therefore, the proposed project would not generate a permanent increase in population levels or a decrease in available housing and impacts would be *less than significant*.

b)

As described above, the project site is currently undeveloped, and no housing units or residents currently exist or occupy the project site. Therefore, no existing housing units or people would be displaced as a result of the proposed project and *no impact* would occur.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

XVI. PUBLIC SERVICES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Result in substantial adverse physical impacts associated with 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) Libraries?	❒	❒	■	❒
v) Other public facilities?	❒	❒	■	❒

EXISTING CONDITIONS

The following public service providers would serve the proposed project:

Fire Protection

Contra Costa County Fire Protection District (CCCFPD): The CCCFPD provides fire protection and Emergency Medical Service for the City of Lafayette, including the project site. The CCCFPD fire stations provide fire and emergency medical services to nine cities, including Lafayette, and the unincorporated areas of Contra Costa County. CCCFPD Station 16 is located in Lafayette at 4007 Los Arabis Drive, approximately 0.75 miles northwest of the project site. Fire Station 16 would be the primary responding station to the project site.[126] The total operating budget for Fiscal Year 2019-20 is $147 million.[127]

The CCCFPD currently imposes a fire facilities impact fee, which funds expanded facilities, such as fire stations, apparatus shops, and administrative buildings, to serve new development in the CCCFPD service area. The impact fees are calculated based on the facilities cost per capita, which is derived by dividing the

[126] Contra Costa County Fire Protection District, available online at http://www.cccfpd.org/fire-prevention.php, accessed on October 9, 2020.

[127] Contra Costa County, 2020, Fiscal Year 2019 – 2020 Recommended Budget, available online at https://www.contracosta.ca.gov/770/Budget-Documents, accessed October 8, 2020.

total value of existing facilities by the existing service population.[128] The fire facilities impact fee would be collected at time of building permit issuance.[129]

Police Protection

The Lafayette Police Department (LPD) for police protection services: The Lafayette Police Department (LPD) provides law enforcement service for the City through a contract with the Contra Costa County Sheriff's Department. There is one police station in Lafayette, located at 3675 Mt. Diablo Boulevard, immediately across from the project site. The LPD is also responsible for maintaining the City's Emergency Operations Center, which is located at 3491 Mt. Diablo Boulevard in the Library.

The LPD has 16 sworn officers, three reserve officers, and five non-sworn officers.[130] Using the City's 2020 population,[131] the LPD's current service ratio is 0.90 police officers per 1,000 service population.[132] The General Plan established the standard response times: a three-minute response time for all life-threatening calls and those involving criminal misconduct; and a seven minute response time for the majority of non-emergency calls. However, there is no statistical data on life threatening call or calls involving criminal misconduct. At the Contra Costa County Sheriff's Office, calls are dispatched as either priority one or two, and the priority one calls include call types that do not fit into the criteria of life threatening or criminal misconduct. Actual response times depend on the nature of the call and the availability of officers to respond to calls for service.

The annual LPD budget for the 2018-2019 fiscal year was $5.9 million, for the 2019-2020 fiscal year was $6.1 million, and projected budget for the 2020-2021 fiscal year increases to $6.8 million. The budget includes all functions of the LPD, including the parking program, school crossing guards, and various commissions that fall under the LPD purview.[133]

Schools

The City of Lafayette is served by the Lafayette School District (LAFSD) and the Acalanes Union High School District (AUHSD). The LAFSD operates five schools in Lafayette, including Lafayette Elementary School, located at 950 Moraga Road. Four of the five LAFSD schools are elementary schools, offering kindergarten

[128] The cost per capita is converted to a fee per unit of development based on dwelling unit and building space densities (persons per dwelling unit and workers per 1,000 square feet of building space). These density factors include an adjustment for vacant space so they can apply uniformly to all new construction.

[129] Contra Costa County Fire Protection District, 2005, Fire Facilities Impact Fee Study and Report.

[130] City of Lafayette Police Department website, https://www.lovelafayette.org/city-hall/city-departments/police, accessed on October 18, 2020.

[131] US Census Bureau, 2019, QuickFacts, https://www.census.gov/quickfacts/lafayettecitycalifornia, accessed on October 8, 2020.

[132] The police officer to 1,000 residents is calculated by 24 officers divided by 2020 population (26,638 population) multiplied by 1,000.

[133] City of Lafayette, 2020, Final Budget, available online at https://www.lovelafayette.org/city-hall/city-departments/administration/finance-budget, accessed October 8, 2020.

through fifth grade classes. The fifth LAFSD school is Stanley Middle School, offering classes for students in grades six through eight.[134]

The AUHSD has four high schools, an Acalanes Center for Independent Study, and an Adult Education Center.[135] Excess enrollment is managed first through inter-jurisdictional transfers, and then through the use of portable or modular classroom buildings. When these measures are exhausted, new classroom facilities would need to be constructed. AUHSD is currently experiencing increased student enrollment, and one of the options being considered is changing the school district boundary to shift some of the student population.[136]

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to safety and associated emergency services in Chapter VI, Safety, and public facilities in Chapter I, Land Use. These chapters include goals and policies to ensure that the City of Lafayette maintains effective police services, provides adequate response and support services in the event of a major emergency or natural disaster, maintains an effective medical emergency response system, minimizes risks to Lafayette residents and property from fire hazards, maintains the existing infrastructure essential to the public health and safety of the community, among others.[137]

DISCUSSION

a. i) – v)

The primary purpose of a public services impact analysis is to examine the impacts associated with physical improvements to public service facilities required to maintain acceptable service ratios, response times or other performance objectives. Public service facilities may need improvements (i.e., construction, renovation or expansion) as demand for services increase. Increased demand is typically driven by increases in population. The proposed project would have a significant environmental impact if it would exceed the ability of public service providers to adequately serve residents, thereby requiring construction of new facilities or modification of existing facilities.

As discussed in Section XV, Population and Housing, above, the proposed project does not include any residences and is simply a relocation of an existing facility with the same activities, and therefore, it would not exceed or contribute to the need for new construction or expansion of an existing fire, police, or library facility that would serve the project site. However, the project would be required to pay the

[134] Lafayette School District website, http://www.lovelafayette.org/index.aspx?page=384, accessed on December 29, 2016.

[135] Alcanes Union High School District, School Directory, http://www.acalanes.k12.ca.us/schools, accessed on December 29, 2016.

[136] Alcanes Union High School District, Frequently Asked Questions Regarding the Residency Verification Process, http://www.acalanes.k12.ca.us/cms/lib01/CA01001364/Centricity/Shared/District/forms/residencyfaqs.pdf, accessed on December 29, 2016.

[137] City of Lafayette, 2002, General Plan – Chapter IV and Chapter I, available online at https://www.lovelafayette.org/city-hall/city-departments/planning-building/general-master-specific-plans/general-plan, accessed November 19, 2020.

required impact fees for new commercial development pursuant to Government Code section 66000 et seq. Therefore, the increase in demand for fire services would be offset and no impact would occur. The level of development proposed by the project is commensurate with existing demand within the County. Therefore, the impacts to public services would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

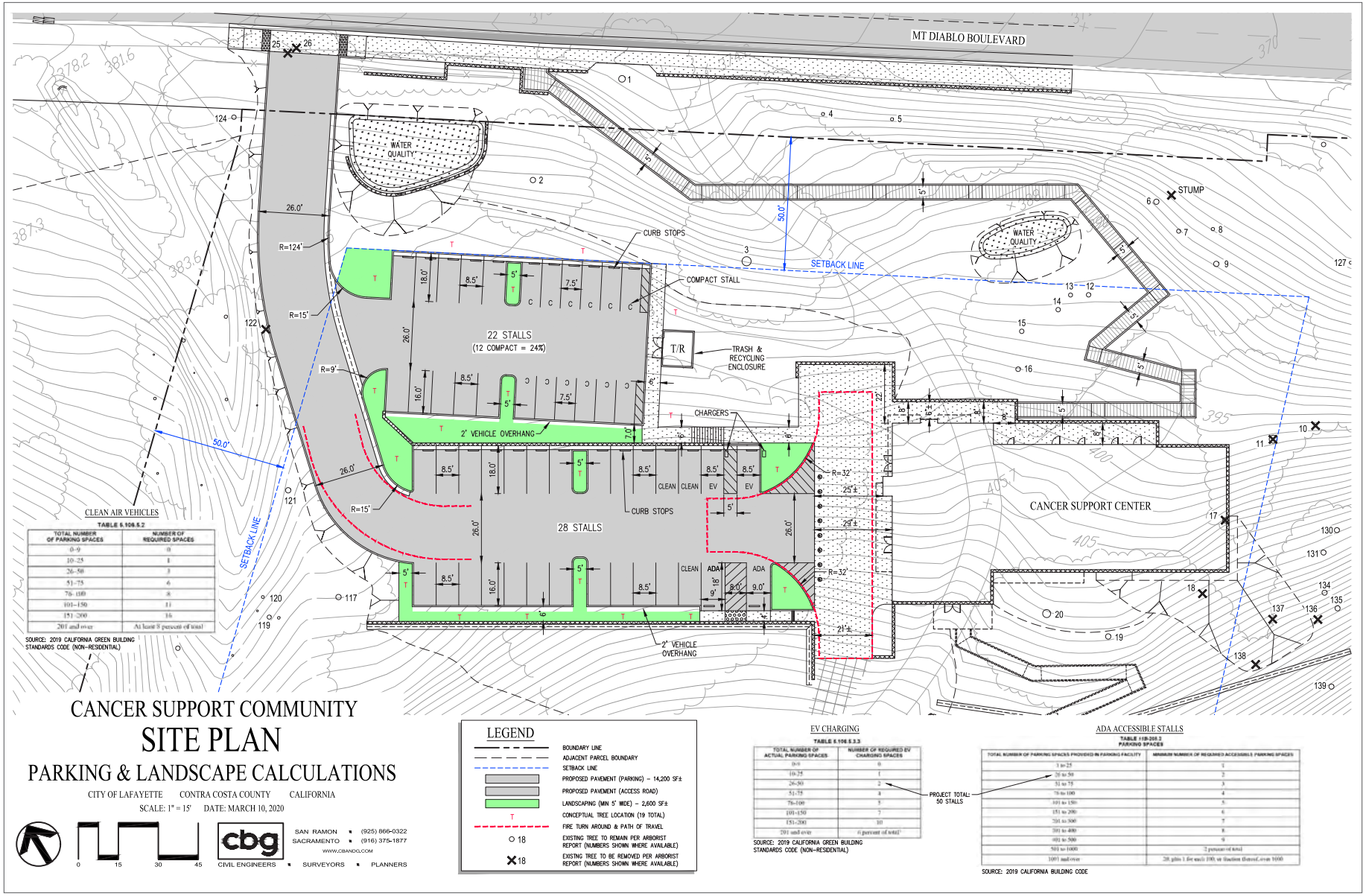
XVII. TRANSPORTATION

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	❒	❒	■	❒
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	❒	■	❒	❒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❒	❒	■	❒
d) Result in inadequate emergency access?	❒	❒	■	❒

A Transportation Impact Assessment (TIA) was conducted for the proposed Cancer Support Community development (project) in the city of Lafayette, California.

The proposed project is the construction of a new campus for the Cancer Support Community. The proposed project site is located on Mt. Diablo Boulevard south of the Lafayette Community Garden and Outdoor Learning Center and west of the Lafayette Reservoir Recreational Area entrance, on a currently undeveloped site. The zones adjacent to the project site are open space and rural residential, while denser residential, retail, and commercial zones are located in the downtown Lafayette area approximately 1.25 miles east of the project site. The development would include a 12,009 square foot building and 50 parking spaces over two parking lots, accessed from Mount Diablo Boulevard, as shown within Figure 4-17.1. The project driveway design is shown in Figure 4.17-2.

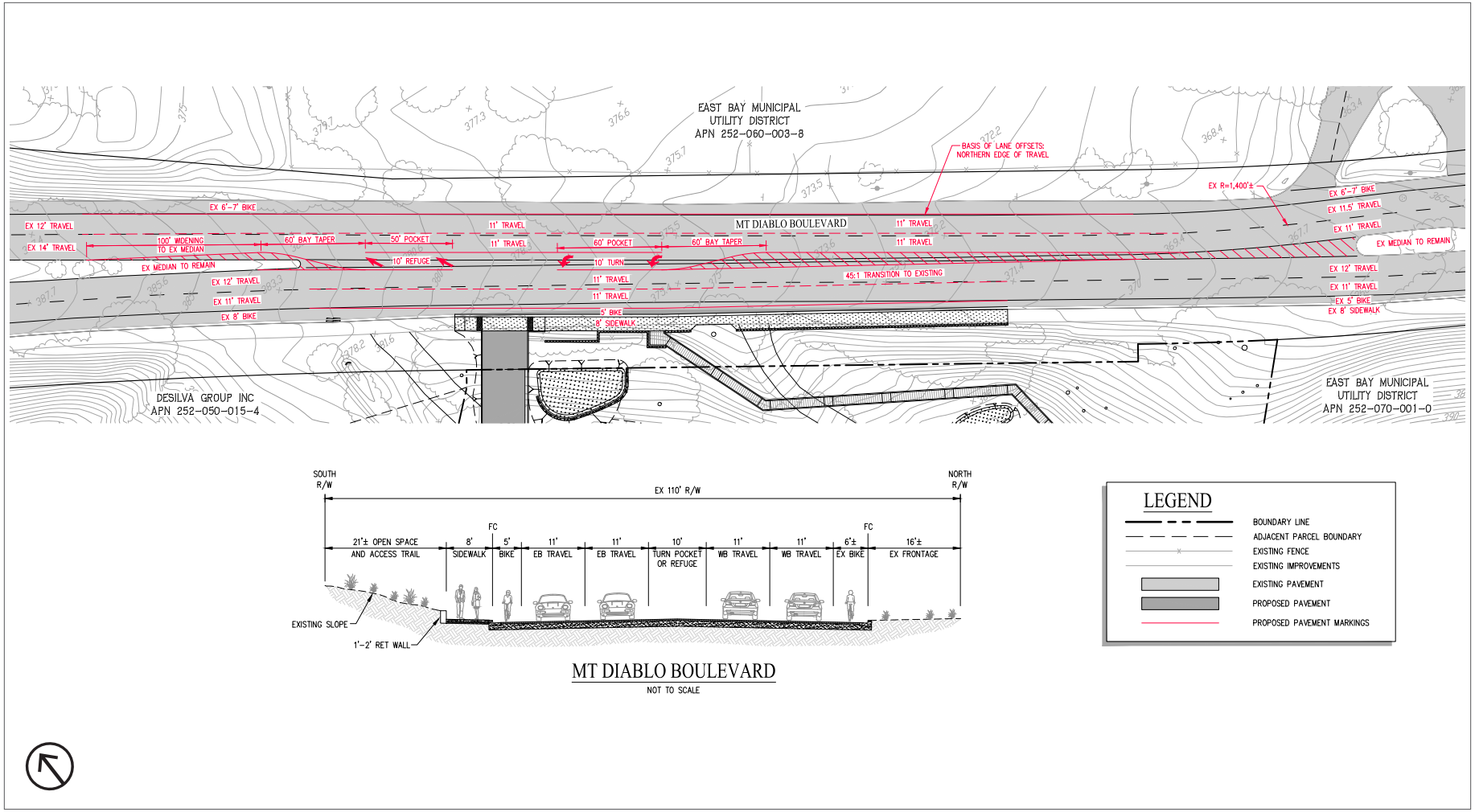
This chapter describes the existing transportation conditions in the study area including the roadway network and transit, pedestrian, and bicycle facilities in the vicinity of the project site; the transportation regulatory setting for the project; and the transportation impact analysis, including mitigation measures where required.



Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 4.17-1

Proposed Access Plan, Street Frontage Improvements and Parking Lot Design



Source: Cancer Support Community, Planning Submittal, March 2020.

Figure 4.17-2
Project Driveway Design

PHYSICAL SETTING

This section describes the transportation and circulation setting, including the existing roadway network and pedestrian, bicycle, and transit facilities.

Existing Transportation Network

Roadway Network

California State Route 24 (CA-24) is an east-west freeway that extends from Walnut Creek to Oakland. CA-24 provides access to the Project site from the northwest via the signalized interchange at Acalanes Road and northeast via the Central Lafayette interchanges. Within the city of Lafayette, CA-24 has four general purpose lanes in each direction and the speed limit of the facility is 65 miles-per-hour (MPH).

Mt. Diablo Boulevard is an east-west four-lane arterial that begins at Acalanes Road and extends through the downtown Lafayette area to the signalized CA-24 interchange at Pleasant Hill Road. The posted speed limit is 45 MPH from Acalanes Road until El Nino Ranch Road, where the speed limit transitions to 35 MPH. The speed limit also turns to 25 MPH through the downtown area.

Mt. Diablo Boulevard provides primary access to the proposed Cancer Support Community Project site and connects the proposed project to the downtown Lafayette area. The proposed project access point is located on Mt. Diablo Boulevard approximately 800 feet east of the El Nino Ranch Road and approximately 700 feet west of the Lafayette Reservoir entrance.

Bicycle Facilities

Bicycle facilities are typically classified into four categories as described below:

- Bicycle paths (Class I) provide a completely separate right-of-way and are designated for the exclusive use bicycles and pedestrians with vehicle cross-flow minimized.
- Bicycle lanes (Class II) provide a restricted right-of-way and are designated for the use of bicycles for one-way travel with a striped lane on a street or highway. Bicycle lanes are generally a minimum of five feet wide. Vehicle parking and vehicle/pedestrian cross-flow are permitted.
- Bicycle routes (Class III) provide right-of-way designated by signs or pavement markings for shared use with motor vehicles. These include sharrows or “shared-lane markings” to highlight the presence of bicyclists.
- Class IV Bikeways (Class IV) cycle tracks or “separated” bikeways provide a right-of-way designated exclusively for bicycle travel within a roadway and are protected from other vehicle traffic by physical barriers, including, but not limited to, grade separation, flexible posts, inflexible vertical barriers such as raised curbs, or parked cars.

Within the study area, Class II bicycle lanes are provided on both directions of Mt. Diablo Boulevard from Acalanes Road to Risa Road/Village Center. To the east of the Risa Road/Village Center and until Dolores Drive, Class II bicycle lanes with on-street parking are provided on Mt. Diablo Boulevard. East of Dolores

Drive, bicycles can ride on a bicycle route (Class III) on Mt. Diablo Boulevard and Happy Valley Road to access the Lafayette BART station.

Pedestrian Facilities

Pedestrian facilities include sidewalks, pathways, crosswalks, and pedestrian signals.

Sidewalks are provided along both sides of Mt. Diablo Boulevard from the Acalanes Road intersection to the Orchard Nursery driveway approximately 650 feet east of the Acalanes Road intersection. There are no sidewalks provided on the north side of Mt. Diablo Boulevard for approximately 450 feet between the Orchard Nursery and Oakwood Athletic Club. For approximately 1,600 feet, sidewalks are provided on both sides of Mt. Diablo Boulevard from the Oakwood Athletic Club to El Nino Ranch Road. Along the proposed project site, there is another gap of sidewalks on the north side from El Nino Ranch Road to the start of the downtown area at Risa Road/Village Center. There are sidewalks provided on both sides of Mt. Diablo Boulevard through the downtown area. The existing pedestrian facilities on the south side of Mt. Diablo Boulevard provide access to the Lafayette Reservoir as well as the downtown area.

The crosswalks closest to the proposed project site are located approximately 800 feet west at El Nino Road and 2,300 feet east at Risa Road/Village Center. The existing pedestrian facilities do not provide access to the developments on the north side of Mt. Diablo Boulevard.

Transit Facilities

Lafayette is served by two major transit providers: Bay Area Rapid Transit (BART) and County Connection.

BART operates commuter train service throughout the East Bay, San Francisco and northern San Mateo County. The city of Lafayette is served by the Antioch-SFO/Millbrae line that operates on weekdays from 4:45 am to 11:00 pm, Saturdays from 7:40 am to 10:35 pm, and Sundays from 7:55 am to 11:10 pm. The project is located approximately 1.2 miles east of the Lafayette BART station. Bike Lockers are provided at the Lafayette BART station.

County Connection provides fixed-route and paratransit bus service for communities in Central Contra Costa County. County Connection Route 6 and School Routes 625 and 626 operate closest to the project site.

Route 6 connects the city of Lafayette to Moraga and Orinda. This route may provide access from the project site to Saint Mary's College, Moraga, and Orinda. The closest bus stop for this route is at the Lafayette BART station, approximately 1.2 miles east of the Project site. This route operates every 30-60 minutes on weekdays from 6:00 am to 8:00 pm and every 80 minutes from 9:30 am to 6:00 pm on weekends.

Route 625 and *Route 626* are school routes that connect the Lafayette BART station to Acalanes High School and Saint Mary's College. These routes operate while school is in session during limited times during the day. Due to the lack of trips throughout the day, these routes are not accessible for the employees and visitors of the proposed project.

Table 4-17.1 summarizes hours of operation, service frequencies, and peak headways for the routes near the project site.

TABLE 4-17.1: EXISTING TRANSIT SERVICES

			Weekdays		Saturday		Sunday	
Route	From	To	Operating Hours1	Peak Headway	Operating Hours[1]	Peak Headway	Operating Hours[1]	Peak Headway
Bay Area Rapid Transit (BART)								
Antioch-SFO/Millbrae	Antioch	SFO	4:45 AM to 11:00 PM	30 minutes	7:40 AM to 10:35 PM	20 minutes	7:55 AM to 11:10 PM	25 minutes
County Connection								
Route 6	Lafayette	Orinda	6:00 AM to 8:00 PM	30-60 minutes	9:30 AM to 6:00 PM	80 minutes	9:30 AM to 6:00 PM	80 minutes

Note:
1. Rounded to the nearest five minutes.

Source: BART and County Connection, August 2020.

REGULATORY FRAMEWORK

State Regulations

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law. The legislature found that with the adoption of the Sustainable Communities and Climate Protection Act of 2008 (SB 375), the State had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled and thereby contribute to the reduction of greenhouse gas emissions, as required by the California Global Warming Solutions Act of 2006 (Assembly Bill 32). In December 2018, the Governor's Office of Planning and Research (OPR) finalized guidelines on evaluating transportation impacts in CEQA based on SB 743.

Implementation of SB 743 eliminated use of criteria including auto delay, level of service, and similar measures of vehicle capacity of traffic congestion as the basis for determining significant impacts as part of CEQA compliance. In place of these "delay based" measures, SB 743, as implemented through OPR's guidelines and incorporated into the CEQA Guidelines as Section 15064.3, requires the use of Vehicle Miles Traveled (VMT) to measure transportation impacts. The SB 743 VMT criterion promotes reduction of greenhouse gas emissions, development of multimodal transportation networks, and a diversity of land uses. As a general rule, OPR's guidance suggests that impacts would be considered significant if project VMT per capita would be expected to be more than 85% of the VMT per capita from existing similar projects.

Public agencies are required to use VMT effective July 1, 2020.

Office of Planning and Research Technical Advisory

In 2018, OPR released the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) containing methodologies and thresholds for VMT.[138] The Technical Advisory provides guidance to CEQA practitioners in the selection of metrics, methodologies, and significance thresholds. The Technical Advisory includes the following guidance on page 10:

> Based on OPR's extensive review of the applicable research, and in light of an assessment by the California Air Resources Board quantifying the need for VMT reduction in order to meet the State's long-term climate goals, OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable threshold.

The Technical Advisory provides a discussion of the underlying evidence for this recommendation, associated with the state's greenhouse gas reduction goals and targets. The guidance applies most directly to residential projects (home based VMT per resident, or all VMT per resident), office projects (home based-work VMT per employee, or all workplace-generated VMT per employee), and retail projects.

For office projects, the Technical Advisory recommends that "a proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact".

For retail projects, the Technical Advisory guidance states that project's effect on total VMT within a region is the appropriate metric, because retail projects typically re-route travel from other retail destinations:

> "Because new retail development typically redistributes shopping trips rather than creating new trips,30 estimating the total change in VMT (i.e., the difference in total VMT in the area affected with and without the project) is the best way to analyze a retail project's transportation impacts.
>
> By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact. Regional-serving retail development, on the other hand, which can lead to substitution of longer trips for shorter ones, may tend to have a significant impact. Where such development decreases VMT, lead agencies should consider the impact to be less-than-significant.
>
> Many cities and counties define local-serving and regional-serving retail in their zoning codes. Lead agencies may refer to those local definitions when available, but should also consider any project specific information, such as market studies or economic impacts analyses that might bear on customers' travel behavior. Because lead agencies will best understand their own communities and the likely travel behaviors of future project users, they are likely in the best position to decide when a project will likely be local serving. Generally, however, retail development including stores larger than

[138] Office of Planning and Research, 2020, Technical Advisory – On Evaluating Transportation Impacts in CEQA, available online at https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf, accessed November 22, 2020.

50,000 square feet might be considered regional-serving, and so lead agencies should undertake an analysis to determine whether the project might increase or decrease VMT."

The document also presents options for screening certain project types from detailed VMT impact analysis, on the basis that the impact can be considered to be less than significant. These include projects within one-half mile of a major transit stop or an existing stop along a high-quality transit corridor (subject to certain criteria); small projects generating less than 110 trips per day, generally equivalent to 10,000 square feet, that are consistent with the General Plan and the Regional Transportation Plan/Sustainable Communities Strategy; and certain affordable housing projects.

Regional Regulations

Contra Costa Transportation Authority

Congestion Management Program

The Contra Costa Transportation Authority (CCTA) is the Congestion Management Agency (CMA) for Contra Costa County and is responsible for maintaining the region's Congestion Management Plan (CMP).[139] The CCTA CMP monitors local multi-modal transportation networks level of service on roadways, bicycle and pedestrian facilities and transit services, and identifies improvements to the performance of these multi-modal systems. The CMP consists of a system of monitoring effort, performance measurement and capital improvement plan for these systems. As required by state legislation, CCTA maintains a travel demand model to forecast proposed changes to the transportation network. Analysis of the proposed Project's impacts on the CMP network is not required, because the Project generates fewer than 100 peak hour trips, as discussed further below.

The CCTA has also produced guidance for local jurisdictions regarding VMT-based impact evaluation. The methodology was approved on July 15, 2020. The CCTA VMT analysis methodology represents the minimum that cities would need to use and to be considered to be in compliance with the growth management program (GMP), and thus eligible for the return-to-source funds managed by the CCTA. The cities are free to set thresholds that are more restrictive than what CCTA suggests.

The following summarizes the CCTA's methodology.

Project Screening

Lead agencies can apply to screen projects out of conducting project-level VMT analysis. Criteria includes:

- CEQA Exemption- Any project that is exempt from CEQA is not required to conduct a VMT analysis.

[139] Contra Costa Transportation Authority, 2019, 2019 Congestion Management Program for Contra Costa, available online at https://ccta.net/wp-content/uploads/2019/12/CMP19_MainDoc_Final.pdf/, accessed August 17, 2020.

- Small Projects- Small projects can be presumed to cause a less-than-significant VMT impact. Small projects are defined as having 10,000 square feet or less of non-residential space or 20 residential units or less, or otherwise generating less than 836 VMT per day.
- Local-Serving Uses- Projects that consist of Local-Serving Uses can generally be presumed to have a less-than-significant impact absent substantial evidence to the contrary, since these types of projects will primarily draw users and customers from a relatively small geographic area that will lead to short-distance trips and trips that are linked to other destinations.
- Projects Located in Transit Priority Areas (TPAs)- Projects located within a TPA can be presumed to have a less-than-significant impact absent substantial evidence to the contrary. Some exempted cases will be noted.
- Projects Located in Low VMT Areas- Residential and employment-generating projects located within a low VMT-generating area can be presumed to have a less-than-significant impact absent substantial evidence to the contrary. A low VMT area is defined as follows:
- For housing projects: Cities, towns, and unincorporated portions within Contra Costa that have existing home-based VMT per capita that is 85% or less of the existing county-wide average.
- For employment-generating projects: Cities, towns, and unincorporated portions within Contra Costa that have existing home-work VMT per worker that is 85% or less of the existing regional average.

Project VMT Analysis

A project not excluded from VMT analysis through the screening process described above shall be subject to a VMT analysis to determine if it has a significant VMT impact. The analysis will include:

- Analysis Scenarios- Establishing baseline and future scenarios to be analyzed.
- VMT Metrics and Significance Thresholds- Defines the specific VMT metrics and significance thresholds that should be used in evaluating different project types:
    - Residential Projects should use the home-based VMT per capita metric to evaluate their project generated VMT. The project generated home-based VMT per resident constitutes a significant impact if it is higher than 85% of the home-based VMT per resident in the subject municipality or unincorporated Authority subregion (for areas outside of municipalities) or 85% of the existing county-wide average home-based VMT per resident, whichever is less stringent.
    - Employment-Generating Projects should use the home-work VMT per worker metric for their project generated VMT estimates. The project generated home-work VMT per worker constitutes a significant impact if it is higher than 85% of the home-work VMT per worker in the subject municipality or unincorporated Authority subregion (for areas outside of municipalities) or 85% of the existing Bay Area region-wide average home-work VMT per worker, whichever is less stringent.
    - Other Uses and Projects need to be analyzed using a methodology developed by the lead agency specifically for the project, prepared and documented based on available data and

taking into account the specific methodologies and thresholds identified in this document.

- Mixed-Use Projects may be analyzed using a combination of techniques described above.

Project VMT Mitigation

Projects that would have the potential to cause a significant VMT impact per one or more of the significance thresholds defined above would require mitigation.

- Method of Calculating Mitigation Reductions- Quantifies reductions assumed from proposed reduction strategies.
- Required Levels of Mitigation- The proposed mitigation measures must reduce VMT to the relevant threshold as defined above.
- Types of Mitigation- To mitigate VMT impacts, the following actions could be taken:
  - Modify the project's characteristics to reduce VMT, or change the project's location to one that is more accessible by transit or other travel modes.
  - Implement transportation demand management (TDM) or physical design measures to reduce VMT generated by the project.
  - Participate in an Authority Board-approved VMT impact fee program and/or VMT mitigation exchange/banking program (Authority staff will be developing such a program in Contra Costa County in the near future).

If the lead agency includes all feasible measures and those measures are not sufficient to fully mitigate the impact, then the VMT impact will be classified as significant and unavoidable. The lead agency may still approve the project, as allowed by CEQA, by making a finding of overriding consideration. Before making such a finding and approving the project, the lead agency must also conduct a cumulative VMT analysis for the project

Local Regulations

City of Lafayette General Plan

The City's General Plan sets forth several policies and programs to and promote safe and efficient transportation routes for pedestrians, bicyclists, and drivers. The following goals and policies are relevant to the proposed project. Note that policies related to level of service are not listed below, because, as discussed above, level of service is no longer allowed as an impact criteria in CEQA.

Circulation

GOAL C-1: Develop a safe and efficient circulation system that respects Lafayette's quality of life and community character and is consistent with other City Goals.

POLICY C-1.5 Roadway Improvements: Plan for and implement changes to the roadway system so that the system is safe and efficient for all modes of travel while preserving the semi-rural character of the community.

GOAL C-4 Coordinate land use and circulation planning.

POLICY C-4.1 Balance Circulation and Land Use Patterns: Limit development to that which can be adequately served by Lafayette's circulation system.

- Program C-4.1.1: Require applicants for new development to demonstrate that there is adequate transportation capacity to handle the additional traffic their project would generate. Evaluate area-wide cumulative traffic impacts as well as the impacts of any proposed mitigations in development review.
- Program C-4.1.3: Approval of development expected to generate over 50 peak hour vehicle trips shall occur only if found to be consistent with Lafayette's growth management goals and the other goals and policies of the General Plan.

Policy C-4.2 Traffic Mitigation: Require new developments to pay their fair share of circulation improvements.

- Program C-4.2.1: Ensure that new development mitigates its off-site adverse impacts on the circulation system and, if applicable, contributes to a citywide traffic mitigation fee program.
- Program C-4.2.2: Ensure that new developments provide adequate on-site improvements, such as delivery access, on-site vehicle, bicycle and pedestrian circulation amenities, public transit facilities, and off-street parking, as appropriate.

DISCUSSION

This section describes the analysis techniques, assumptions, and results used to identify impacts of the project on the transportation system. Transportation impacts are described and assessed, and mitigation measures are recommended for impacts identified as significant or potentially significant.

a)

Project Driveway Operations

This sub-section addresses how the new project driveway would operate, which affects both project vehicular access and operations along Mount Diablo Boulevard. This analysis is presented to demonstrate consistency with the following relevant City of Lafayette General Plan policies and programs:

- Policy C-1.5: Plan for and implement changes to the roadway system so that the system is safe and efficient for all modes of travel while preserving the semi-rural character of the community.
- Policy C-4.1: Limit development to that which can be adequately served by Lafayette's circulation system.
- Program C-4.1.1: Require applicants for new development to demonstrate that there is adequate transportation capacity to handle the additional traffic their project would generate.

The Cancer Support Community currently employs 10 full-time employees (Monday – Friday) and about six part-time employees, and serves primarily people throughout Contra Costa County, with a few coming from Alameda County. For purposes of this analysis, people receiving services at the Cancer Support Community are identified as "clients".

Table 4-17.2 shows the activity at the current site based on the past year (pre-COVID data), as provided by the project applicant. Table 4-17.3 shows the activity related to special events, which occur on weeknight evenings and on Saturdays. The project applicant has stated that the new Lafayette facility is expected to function similarly to the current facility at 3276 McNutt Avenue in Walnut Creek, and serve a clientele within a similar radius (about a 35-minute driving time or less). While the new facility would provide more physical space than the current facility (12,000 square feet as compared to 7,700 square feet), the extra space is associated with a larger lobby and welcoming space, and not with more or larger meeting rooms and activity rooms.

TABLE 4-17.2: CANCER SUPPORT COMMUNITY ATTENDANCE AND EMPLOYMENT

	M	T	W	Th	F	Sat	Average weekday
Employees/day	16	16	16	16	16	4	16
Average clients/day	77	100	91	47	53	75	74
Employee vehicle trips/day (round trips) (1)	16	16	16	16	16	4	16
Client vehicle trips/day (round trips) (2)	70	91	83	43	48	68	67
Total	86	107	99	59	64	72	83

(1) Assumes all employees would drive in single-occupant vehicles.
(2) Assumes some carpooling, at an aggregate rate of 1.1 persons per vehicle.
Source: *Traffic Data Report* 10.08.20, provided by applicant; and Fehr & Peers, November 2020.

TABLE 4-17.3: SPECIAL EVENTS

					Round Trips
Event	Day	Time	#/year	Avg Attendance	Avg Vehicles
Kids Circle	Sat	10:00 AM	12	31	16
Guest Speaker	Tues/Wed	6:00 PM	24	37	33
Social Event	Tues/Wed	6:00 PM	6	57	50

Source: Events per year, attendance and estimated vehicle trips provided by project applicant.

Table 4-17.4 summarizes the estimated project trip generation in the AM peak hour, PM peak hour, and PM peak hour during special events, using work and activity scheduling information provided by the

project applicant. The project would generate about 25 trips in the weekday AM peak hour (typically 8 – 9 AM), and 34 trips in the weekday PM peak hour (typically 5-6 PM). To asses a "worst case" special event, a weekday evening social event was modelled, with 50 inbound trips and 10 outbound trips occurring during the PM peak hour, reflecting 50 attendees arriving and 10 full time employees leaving. This information is derived from the project applicant's detailed activity data, which is included in the Technical Appendix F.

TABLE 4-17.4 PROJECT PEAK HOUR TRIP GENERATION

	AM Peak Hour			PM Peak Hour			Special Event PM Peak Hour (all trips)		
Land Use	In	Out	Total	In	Out	Total	In	Out	Total
Employees	10	0	10	3	10	13	--	--	--
Attendees	15	0	15	21	0	21	--	--	--
Total	25	0	25	24	10	34	50	10	60

Source: *Traffic Data Report* 10.08.20, provided by project applicant.

Based on the employee and attendee residence information, it is assumed that approximately 80 percent of drivers would approach the site from the east and 20 percent would approach the site from the west. This is based on the large majority of residences located in Lafayette or points east, and the assumption that most of those drivers would choose to use the downtown Lafayette freeway ramps to travel to the site, but that some would choose to use the Acalanes Road ramps.

Existing peak hour traffic volumes along Mount Diablo Boulevard at the location of the proposed project site driveway were developed using 2016 counts from the Woodbury Highlands project traffic impact analysis, factored up by four percent to represent 2020 volumes. Cumulative (year 2040) volumes were taken from the future year forecasts in the Woodbury Highlands analysis.

Table 4-17.5 summarizes the resulting Mount Diablo Boulevard roadway volumes and project trip driveway volumes at the proposed project driveway under existing and cumulative conditions.

TABLE 4-17.5 PROJECT DRIVEWAY INTERSECTION VOLUMES

	Mount Diablo Blvd Volumes		Project Driveway Volumes			
	Mount Diablo EB	Mount Diablo WB	Mount Diablo WB Left In	Mount Diablo EB Right In	Left Out to Mount Diablo WB	Right Out to Mount Diablo EB
Existing (2020)						
AM Peak Hour	461	693	20	5	0	0
PM Peak Hour	1,039	558	19	5	2	8
Special Event PM Peak Hour	1,039	558	40	10	2	8
Cumulative (2040)						

TABLE 4-17.5 PROJECT DRIVEWAY INTERSECTION VOLUMES

AM Peak Hour	490	780	20	5	0	0
PM Peak Hour	1,167	605	19	5	2	8
Special Event PM Peak Hour	1,167	605	40	10	2	8

Source: Woodbury Highlands Initial Study, April 2017; Fehr & Peers, November 2020.

The project driveway operations analysis uses the Synchro 10 software, based on the procedures outlined in the Transportation Research Board's *Highway Capacity Manual, Sixth Edition* (HCM 6). Intersection operation inputs include vehicle volumes, lane geometry, and peak hour factors (which describes the relationship between the peak 15-minute volume to the full hourly volume), among other inputs. A key output of the analysis is the 95th percentile queue for each movement, which describes the vehicles queue length which would be exceeded in no more than five percent of the signal cycles each hour. A signal cycle is composed of all signal phases serving the various intersection movements and approaches. For safe and efficient intersection operations, an intersection's design should accommodate the 95th percentile queues for controlled movements without the queues extending into upstream free-flow lanes or otherwise impeding upstream operations.

The analysis of the Existing With Project, Cumulative With Project, and Cumulative With Project/Special Event cases indicate that the project driveway would operate with 95th percentile vehicle queues generally limited to one vehicle. Queues are therefore not expected to exceed the storage lane capacity on Mount Diablo Boulevard, which could accommodate two to three vehicles, nor the available storage on the project driveway, which could accommodate about four vehicles without blocking the lower parking lot driveway, and seven vehicles without blocking the upper parking lot driveway. Detailed queue calculation sheets are provided in Technical Appendix F.

Based on this assessment, the project would not obstruct vehicle flows on Mount Diablo Boulevard and would thus not conflict with Lafayette General Plan policies and programs addressing the roadway system.

Transit Facilities

The closest transit stops to the project site are located approximately 1.2 miles east at the Lafayette BART Station. The Lafayette BART Station serves the BART Antioch-SFO/Millbrae line and County Connection Route 6. The project would not result in a significant increase in transit demand. The project does not conflict with existing or planned transit service and facilities in the study area.

Bicycle Facilities

Class II bicycle lanes are provided in both directions of Mount Diablo Boulevard from Acalanes Road to Risa Road/Village Center. The project site can be accessed using the Class II bicycle lane on Mount Diablo Boulevard. The project would not conflict with existing or planned bicycle facilities in the study area.

Pedestrian Facilities

Sidewalks are provided along both sides of Mt. Diablo Boulevard from the Acalanes Road intersection to the Orchard Nursery driveway approximately 650 feet east of the Acalanes Road intersection. The existing pedestrian facilities on the south side of Mt. Diablo Boulevard provide access to the project site. The crosswalks closest to the proposed project site are located approximately 800 feet west at El Nino Road and 2,300 feet east at Risa Road/Village Center. The project would not conflict with existing or planned pedestrian facilities. Therefore, the impact would be *less than significant*.

b)

The project is a unique use that does not exactly match the use types for which OPR and the CCTA have provided specific guidance regarding VMT analysis and significance thresholds (office, residential, and retail projects). It would function in part like office space, in that employees would work at the site, and partly like a retail space, in that clients would come to the site for services. Therefore, the VMT impact assessment is conducted separately for these two uses.

Project Service Use

The Project would serve a unique client base which has limited other sites within the Bay Area for these specific services, according to the applicant. The services are currently being provided at 3276 McNutt Avenue in Walnut Creek, and the service area of the new site is expected to shift based on the new location, based on the applicant's tracking of how far clients are typically willing to drive; the corresponding regional VMT generated by the service uses at the project site are therefore be expected to be similar to the current client VMT generated at the current Cancer Support Community site. Furthermore, given the lack of similar facilities providing support programs for those dealing with cancer, clients desiring those services would be forced to drive longer distances, thus increasing VMT. It is also noted that both the current site and the project site are located a similar distance from a BART station, and a similar driving distance from freeway access points. Thus, these factors would not contribute to a higher VMT rate for the project site as compared to the current site.

Both OPR's Technical Advisory and CCTA's VMT Analysis Methodology state that retail uses which would not be expected to increase regional VMT can be considered to have a less than significant impact on VMT. Therefore, the project's service use would have a less than significant impact on VMT.

It is also noted that the project size, at 12,000 square feet, is only 2,000 square feet larger than the "small project" definition which is also allowed to be screened from VMT impact analysis, per the OPR Technical Advisory and the CCTA VMT Analysis Methodology. While the project is not proposed to be screened based on the small project criteria, this is supporting information for the less than significant finding.

Project Employment Use

As noted under Impact TRANS-1, the project would employ 10 full-time staff and about 6 part-time staff, the same as the current Cancer Support Community site in Walnut Creek. To estimate the project home-based work VMT per employee, the Contra Costa Countywide Travel Demand Model was reviewed, and the home-based work VMT per employee for the traffic analysis zone (TAZ) most closely representing the project site was extracted.[140] The countywide average home-based work VMT per employee was also obtained from the model, and the 15 percent below countywide average metric was calculated, as shown on Table 4-17.6.

TABLE 4-17.6: PROJECT EMPLOYEE VMT AND COMPARISON TO COUNTYWIDE AVERAGE

	Values	
Metric	Baseline (2018)	Cumulative (2040)
Countywide Average Home-Based Work VMT per Employee	14.85	15.24
15% Below Countywide Average Home-Based Work VMT per Employee	12.62	12.96
Project TAZ Home-Based Work VMT per Employee	17.02	17.78

Source: Contra Costa Countywide Travel Demand Model; Fehr & Peers, November 2020.

The project home-based work VMT per employee (17.02 in the baseline case and 17.78 in the cumulative case) exceeds a level of 15 percent below the countywide average home-based work VMT per employee (12.62 in the baseline case and 12.96 in the cumulative case). The project metric exceeds the countywide metric by 35 percent in the baseline case (17.02 as compared to 12.62) and by 37 percent in the cumulative case (17.78 as compared to 12.96). Therefore, the project would have a significant impact on employment generated home-based work VMT.

Impact TRANS-2: Significant without mitigation (based on employee VMT).

Mitigation Measure TRANS-2: The project applicant shall develop an employee travel demand management (TDM) program with measures designed to reduce the projected employee commute vehicle trips by 37 percent, addressing both the baseline and cumulative exceedance in Impact TRAN-2. This mitigation measure focuses on trip generation as opposed to both trip generation and trip length, because trip lengths are largely out of the control of the project applicant. For the purposes of this mitigation, given the small number of employees (10 full time and 6 part time), an employee commute single-occupant vehicle trip generation rate of 16 X (1- 0.37) = 10 single-occupant vehicle round-trips per day will be considered to reduce the impact to a less than significant level.

[140] While employee home-based work VMT could be calculated using the existing employee residence data provided by the project applicant, this would not be appropriate because it would result in an apples-to-oranges comparison to a countywide average metric estimated with the Contra Costa Countywide Travel Demand Model. Following best practices for VMT estimation, the model was used for both the project VMT metric and the countywide average metric.

Measures expected to be most effective in reducing employee commute vehicle trips for this project include:

- Subsidies for BART use and CCCTA bus use
- Provision of a shuttle, car service, or transportation network company service to connect employees to the Lafayette BART station (this service could be extended to clients to further reduce the project's VMT generation)
- Carpooling incentives
- Guaranteed ride home program for those using BART or the bus to commute
- Alternate work schedules (9/80 or 4/40) and telecommuting options

The project applicant or site operator will monitor the employee commute vehicle trips with an annual survey and prepare a report for the City of Lafayette's review documenting measures implemented and employee commute modes used. The first survey will be conducted and documented after one year of full site operation. If the 10-employee single-occupant vehicle round trips target has not been met, the applicant will develop additional measures to reduce employee commute single-occupant vehicle trips and submit a report to the City describing the new measures. This process will continue in years two, three, four, and five of the site's full operation. If after the year five report, employee single-occupant vehicle trips are not ten or less, the reporting may continue as an optional good faith effort by the applicant/operator.

Given the relatively small number of vehicle round trips required to reduce the impact to a less-than significant level (16 round trips to 10 round trips), compliance with the above mitigation measure will be considered to have reduced the impact to a *less than significant* level.

Significance with Mitigation: Less than significant.

c)

The project proposes a site access design which is similar to the Lafayette Reservoir access design approximately 735 feet east of the project driveway location. Based on a review of historical collision data between 2014 and 2018 in the vicinity of the Lafayette Reservoir intersection on Mount Diablo Boulevard, there were no collision trends indicating problems created by the intersection designs at the Lafayette Reservoir access to the east nor the El Nido Ranch Road access to the west. Since the proposed site would have a similar site access design, it is not expected that the project driveway intersection would create a hazardous condition on Mount Diablo Boulevard.

A sight distance analysis was also conducted at the project driveway. According to the AASHTO Green Book 7th Edition (2018), adequate sight distance for a stopped vehicle turning onto a major roadway with a prevailing speed of 45 miles per hour from a minor roadway is approximately 430 feet. A speed of 45 miles per hour was chosen because, while the "35 mph ahead" sign is located upstream of the location of the project site driveway, the speed limit in effect at the project site driveway is still 35 mph. Figure 4.17-2 below shows the sight line of a driver set back about 15 feet from the edge of the traveled way on Mount

Diablo Boulevard. The green dot simulates an object approximately 430 feet on the left of a vehicle exiting the project site. The driver exiting the project site would have clean and adequate sight of oncoming traffic to make safe maneuvers from the project access.

It is also noted that, according to General Plan Policy C-1.6 on traffic safety, the proposed project access shall be reviewed for safety by the city traffic engineer.

Therefore, impacts due to an increase in hazards due to a geometric design feature would be *less than significant*. However, the city traffic engineer may consider moving the 35 mph transition to be upstream of the project site, since the project driveway will replace the Lafayette Reservoir driveway as the first intersection on the south side of Mount Diablo Boulevard in the eastbound direction that drivers from the Acalanes Road interchange area encounter.

Source: PlaceWorks, 2020.

Figure 4.17-3
Driver Site Line

d)

The project's proposed turning bays would accommodate peak hour project traffic, and queues would not spill back into the through-travel lanes. Therefore, the project would not obstruct emergency vehicles using Mount Diablo Boulevard, and the project would not affect emergency response times. This impact would be *less than significant.*

XVIII. TRIBAL CULTURAL RESOURCES

Would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a 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: i) 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), or ii) 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 Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe.	❒	■	❒	❒

EXISTING CONDITIONS

Assembly Bill 52 (AB 52), which took effect on July 1, 2015, amends CEQA and adds standards of significance that relate to Native American consultation and certain types of cultural resources. Projects subject to AB 52 are those that file a notice of preparation for an EIR or notice of intent to adopt a negative or mitigated negative declaration on or after July 1, 2015. As of July 1, 2016, the Governor's Office of Planning and Research (OPR) developed guidelines and the NAHC informed tribes which agencies are in their traditional area. In response to these guidelines, this Section V, Tribal Cultural Resources, has been added as a stand-alone section to this Initial Study.

AB 52 requires the CEQA lead agency to begin consultation with a California Native American Tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if the Tribe requests in writing, to be informed by the lead agency through formal notification of the proposed projects in the area. The consultation is required before the determination of whether a negative declaration, mitigated negative declaration, or EIR is required. In addition, AB 52 includes time limits for certain responses regarding consultation. AB 52 also adds "tribal cultural resources" (TCR) to the specific cultural resources protected under CEQA.[141] CEQA Section 21084.3 has been added, which states that "public agencies shall, when feasible, avoid damaging effects to any tribal cultural resources." Information shared by tribes as a

[141] California Environmental Quality Act Statute, Section 21074.

result of AB 52 consultation shall be documented in a confidential file, as necessary, and made part of a lead agencies administrative record.

In response to AB 52, the City of Lafayette has not received any request from any Tribes in the geographic area with which it is traditionally and culturally affiliated with or otherwise to be notified about projects in the City of Lafayette.

A TCR is defined under AB 52 as a site, feature, place, cultural landscape that is geographically defined in terms of size and scope, sacred place, and object with cultural value to a California Native American tribe that are either included or eligible for inclusion in the California Register of Historic Resources or included a local register of historical resources, or if the City of Lafayette, acting as the lead agency, supported by substantial evidence, chooses at its discretion to treat the resource as a TCR.

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to cultural resources in Chapter I, Land Use. This chapter include goals and policies to preserve archaeological and historic resources.[142]

DISCUSSION

a.i)

A search of the California Historical Resources through the Office of Historic Preservation reveals that there are no listed resources or potential resources eligible for listing in the California Register of Historical Resources within the boundaries of the proposed project.[143] Therefore, the proposed project would result in less than significant impacts to archeological resources pursuant to Section 15064.5.

a.ii)

As described above, In accordance with AB 52 (PRC Section 21084.2) lead agencies are required to consider Tribal Cultural Resources (TCR) including a site feature, place, cultural landscape, sacred place or object, of cultural value to the tribe and is listed on the California Register of Historic Resources (CRHR) or a local register, or the Lead agency, at its discretion, chooses to treat resources as such.

As discussed under Criteria (b) and (c) in Section IV, Cultural Resources, no known archeological resources, ethnographic sites or Native American remains are located on the project site. Implementation of Mitigation Measure CULT-2 would reduce impacts to unknown archaeological deposits, including TCRs, to a less-than-significant level. Furthermore, implementation of Mitigation Measure CULT-3, as well as compliance with State and federal regulations would reduce the likelihood of disturbing or discovering

[142] City of Lafayette, 2002, General Plan – Chapter I, available online at https://www.lovelafayette.org/Home/ShowDocument?id=1933, accessed November 19, 2020.

[143] Office of Historic Preservation, California Historical Resources, 2020, available online at https://ohp.parks.ca.gov/ListedResources/?view=county&criteria=21, accessed March 20, 2020.

human remains, including those of Native Americans. Therefore, implementation of Mitigation Measures CULT-2 and CULT-3 and compliance with State and federal regulations related to the protection of human remains would reduce impacts to TCRs to a *less-than-significant* level.

AB 52 mandates that a lead agency initiate consultation with a tribe with traditional and/or cultural affiliations in the geographic area where a subject project is located.[144] Should the tribe respond requesting formal consultation, the lead agency must work with the tribe or representative thereof to determine the level of environmental review warranted, identify impacts, and recommend avoidance or mitigation measures to reduce any potential impacts.

The City of Lafayette began the consultation process under Public Resources Code (PRC) sections 21080.3.1 and 21084.3(c) (commonly known as AB 52) by contacting the NAHC to inform them about the proposed project.

In response, the NAHC completed a record search of Sacred Lands File (SLF) for the project location and the results were negative.[145] Pursuant to AB 52, the NAHC provided a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the proposed project. With the list of tribes, the City contacted local tribal representatives by letter, inviting them to initiate consultation (see Appendix G). The purpose of the letter was to inform nearby tribes of the project. The letter provided a description of the proposed project, as well as figures of the project location and site plan. As of publication of this Draft IS, no responses have been received from the tribes.

Significance without Mitigation: Significant.

Impact TRI-1: Implementation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.

Mitigation Measure TRI-1: Implementation of Mitigation Measures CULT-2 and CULT-3.

[144] California Legislative Information, 2014, Assembly Bill No. 52, AB-52 Native Americans: California Environmental Quality Act, available online at https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201320140AB52, accessed March 24, 2020.

[145] Sarah Fonseca, Cultural Resources Analyst, Native American Heritage Commission, November 9, 2020, Letter to Nancy Tran.

XIX. UTILITIES AND SERVICE SYSTEMS

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

EXISTING CONDITIONS

The following utilities would serve the proposed project:

- East Bay Municipal Utility District for water services.
- Contra Costa County Sanitary District (CCCSD) is responsible for wastewater collection, treatment, and disposal for the City of Lafayette.
- Central Contra Costa Solid Waste Authority (CCCSWA), a Joint Powers Authority, oversees solid waste collection, disposal, and recycling services.
- The Pacific Gas and Electric Company (PG&E) would provide natural gas and electricity services.
    - A California Community Choice Aggregation (CCA), which provides electricity from renewable sources and is serviced through PG&E.

Water

The EBMUD provides wholesale water, retail water, wastewater collection, and wastewater treatment services for an area of approximately 331 square miles in Contra Costa and Alameda counties. Currently, EBMUD provides an average of 220 MGD in non-drought years. The main source of these supplies is the Mokelumne River with a diversion point at Pardee Reservoir in Calaveras and Amador counties.[146] Overall, the EBMUD has the water rights and capacity for 325 MGD from the Mokelumne River.[147]

[146] East Bay Municipal Utility District (EBMUD), 2012, Water Supply Management Program 2040 Plan, April, page 3-1.
[147] East Bay Municipal Utility District (EBMUD), 2012, Water Supply Management Program 2040 Plan, April, page 3-5.

Water is distributed throughout EBMUD's service area via 4,200 miles of pipelines, 125 pumping plants, and 165 water distribution reservoirs with a total capacity of 830 MGD.[148] Average daily demand is approximately 230 MGD systemwide in 2040.[149] EBMUDs average daily per capita consumption rate is 153 gallons per day (GPD) in 2020.[150]

EBMUD maintains six water treatment plants (WTPs) to ensure the safety and quality of drinking water. Water treated at the Lafayette WTP is distributed to the central part of the service area, including the project site. The Lafayette WTP has a permitted capacity of 35 MGD which is not enough to meet service area demands; thus, Lafayette currently relies in part on water treated at other EBMUD WTP facilities.[151]

While sufficient to meet current daily needs for the service area as a whole, capacity constraints at some EBMUD WTPs make meeting peak demands difficult and upgrades are required to meet projected future demand.[152] Improvements are also necessary to address new and emerging water quality issues, meet federal and State regulatory standards related to water quality, and comply with environmental permit conditions. EBMUD has developed the Water Treatment and Transmission Improvements (WTTI) Program to address this situation. Changes are scheduled at the Lafayette, Orinda, Walnut Creek, Upper San Leandro, and Sobrante WTPs, and the EBMUD Board of Directors certified an EIR for the Program in 2006.

Wastewater

The Contra Costa County Sanitary District (CCCSD) is responsible for wastewater collection, treatment, and disposal for the City of Lafayette. CCCSD maintains the sewer system in Lafayette, including the infrastructure in the vicinity of the project site. The CCCSD has projected wastewater flows for future development in Lafayette and has identified facility improvements required to maintain service at or above the required level in its Collection System and Treatment Master Plans.[153] Improvements are prioritized and scheduled annually in the CCCSD's Capital Improvement Budget and Ten-Year Capital Improvement Plan. Funding for maintenance and upgrade of existing facilities comes from property taxes and a portion of the CCCSD's annual Sewer Service Charge. Improvements required as a result of new development are funded from fees and charges applicable to all new development at the time of connection to the sewer system. The collection system can accommodate projects with up to 50 units; however, for larger projects, the CCCSD conducts an analysis of downstream collector ability to absorb increased flows.[154]

[148] East Bay Municipal Utility District (EBMUD), 2016, Urban Water Management Plan 2015, July, page 14.
[149] East Bay Municipal Utility District (EBMUD), 2016, Urban Water Management Plan 2015, July, page 52.
[150] East Bay Municipal Utility District (EBMUD), 2016, Urban Water Management Plan 2015, July, page 105.
[151] East Bay Municipal Utility District (EBMUD), 2016, Urban Water Management Plan 2015, July, page 14.
[152] East Bay Municipal Utilities District (EBMUD), 2006, Water Treatment and Transmission Improvements (WTTI) Program Environmental Impact Report.
[153] City of Lafayette, 2002, Lafayette General Plan Revision, Draft Environmental Impact Report, July.
[154] City of Lafayette, 2002. Lafayette General Plan Revision, Draft Environmental Impact Report, July.

Wastewater from downtown Lafayette is treated at the CCCSD treatment facility in Martinez, from which the CCCSD has a permit to discharge treated wastewater into Suisun Bay. The treatment plant has a reliable physical capacity and permit to discharge up to 54 million gallons per day (MGD) and 240 MGD of wet weather flow. Currently, the treatment plant cleans an average of 34 MGD.[155]

Stormwater

The Lafayette storm drain system is a network of open channels and pipes which drain into the six major creeks.[156] For the project site, the storm drain system drains into Hidden Valley Creek, and ultimately into Lafayette Creek. The City is responsible for operation and maintenance of publicly-owned portions of the system. Maintenance of portions on private property is the responsibility of the landowner.

Business areas with the potential for impacting stormwater quality are inspected at least once every five years, with priority facilities receiving inspection at least once a year. Although illicit discharge in Lafayette is minimal, City crews inspected 19 facilities in 2018 to 2019 and undertook five enforcement actions.[157]

Solid Waste and Recycling

The Central Contra Costa Solid Waste Authority (CCCSWA), a Joint Powers Authority, oversees solid waste collection, disposal, and recycling services in Walnut Creek, Danville, Moraga, Lafayette, and Orinda, and the unincorporated areas of Contra Costa County.[158] The CCCSWA has agreements with Allied Waste for the collection, transfer, and disposal of residential and commercial solid waste, and with Valley Waste Management for the collection of residential recycling, green waste, and food scraps.[159] Allied Industries transports the collected solid waste to the Contra Costa Solid Waste Transfer and Recovery Station (CCSWTRS) in Martinez. From there, non-recyclable material is taken to the Keller Canyon Landfill in Contra Costa County for ultimate disposal. Keller Canyon Landfill is permitted to receive up to 3,500 tons of waste per day. CalRecycle lists the expected closure date of the landfill to be December 31, 2030. The landfill has a total capacity of 75.018 million cubic yards and a remaining capacity of over 63.408 million cubic yards.[160]

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[155] Central Contra Costa Sanitary District, 2020, Treatment Plant, available online at https://www.centralsan.org/treatment-plant, accessed November 20, 2020.

[156] City of Lafayette, 2002. Lafayette General Plan, Chapter VI, Safety.

[157] Contra Costa Clean Water Program. Fiscal Year 2018-19 Annual Report, https://www.cccleanwater.org/userfiles/kcfinder/files/CCC%20FY19-20%20AR.pdf, accessed on November 18, 2020.

[158] Central Contra Costa Solid Waste Authority website, http://www.recyclesmart.org/node/68, accessed on November 18, 2020.

[159] Central Contra Costa Solid Waste Authority website, http://www.recyclesmart.org/filebrowser/download/768, accessed on November 18, 2020.

[160] California Integrated Waste Management Board, http://www.calrecycle.ca.gov/SWFacilities/Directory/07-AA-0032/Detail/, accessed on November 18, 2020.

Electricity and Natural Gas

The Pacific Gas and Electric Company (PG&E) would provide natural gas and electricity services to the project site, through new on-site infrastructure connecting to existing distribution systems. PG&E was incorporated in California in 1905 and provides natural gas and electric to approximately 15 million people throughout a 70,000-square-mile service area in northern and central California. PG&E produces or buys its energy from a mix of conventional and renewable generating sources, which travel through their electric transmission and distribution systems to reach their customers.

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to public utilities in Chapter I, Land Use. This chapter include goals and policies to address public utility facilities, transformer stations, transportation facilities, water treatment plants and related easements, among others.[161]

DISCUSSION

a)

As discussed above, EBMUD has developed the WTTI Program to address water treatment capacity constraints in its service area, meet future regulatory standards related to water quality, and comply with environmental permit conditions.[162] Under this program, the Lafayette WTP will be expanded and upgraded to allow it to meet forecasted future demand across a territory which includes the project site.

Future water demand was assessed in consultation with the City of Lafayette and includes consideration of development in downtown Lafayette over the next 20 years. Therefore, implementation of the project would not include any improvements not already included in the WTTI program. As a result, the impact of the proposed project on water treatment facilities would be *less than significant.*

The proposed project is not expected to require the expansion of existing storm drain facilities. However, because the proposed project would create and/or replace 10,000 square feet or more of impervious surfaces, it must comply with the C.3 requirements for stormwater control. Through C.3 compliance, the proposed project would involve actions to minimize runoff from the project site. Consequently, the proposed project would not require the expansion of existing stormwater facilities or the construction of new facilities, the construction of which could otherwise have significant impacts. Therefore, impacts would be *less than significant.*

The project site is currently served by existing PG&E distribution systems that would provide natural gas and electricity services to the project site. As described in Section X, Land Use, above, the proposed project complies with the General Plan land use designation requirements as well as the Zoning district

[161] City of Lafayette, 2002, General Plan – Chapter I, available online at https://www.lovelafayette.org/Home/ShowDocument?id=1933, accessed November 19, 2020.

[162] East Bay Municipal Utilities District (EBMUD), 2006. Water Treatment and Transmission Improvements (WTTI) Program Environmental Impact Report.

requirements and would not result in new growth potential from what was considered in the City's General Plan. The project would include appropriate on-site infrastructure to connect to the existing PG&E systems and would not require new off-site energy supply facilities and distribution infrastructure or capacity enhancing alterations to existing facilities. Accordingly, impacts would be *less than significant*.

b)

Projected water demand for the EBMUD service area including the City of Lafayette, which includes the project site, is 230 MGD in 2040. Lafayette accounts for approximately 5 percent or 12 MGD of this total demand.[163,164] Utilizing the CalEEMod default for annual per capita water demand, the proposed project would create the demand for approximately 4129 GPD or 1.51 MGD.[165] As described under existing conditions, EBMUD has a total available supply of 325 MGD through 2040. This supply is therefore sufficient to meet additional demand from the proposed project. Accordingly, impacts from the proposed project would be *less than significant*.

c)

The CCCSD has already accounted for future development in Lafayette and improvements to accommodate it. The proposed project would not require any off-site expansions or new construction of wastewater treatment facilities because the anticipated wastewater generation would be within the capacity of the existing CCCSD wastewater treatment plant. Projected wastewater generation for the proposed project would be approximately 786.4 GPD, or 287,051.7 GPD.[166]

As discussed under existing conditions, the CCCSD treatment plant has a reliable physical capacity and permit to discharge up to 54 MGD and 240 MGD of wet weather flow, with a current demand of 34 MGD. Therefore, the plant's capacity is sufficient to meet the additional demand from the proposed project. As a result, there would be a *less than significant* impact on wastewater treatment facilities.

d)- e)

Solid waste from the proposed project would be transferred to the Keller Canyon Landfill in Contra Costa County for ultimate disposal. The Keller Canyon Landfill is permitted to receive up to 3,500 tons of waste per day and currently receives about 2,500 tons of waste per day. Remaining capacity is over 63.408 million cubic yards.

The proposed project consists of Cancer Support Community center that will accommodate up to 120 new visitors at a time that could generate approximately 0.36 tons of solid waste per day, or approximately 129.7 tons of solid waste per year.[167]

[163] East Bay Municipal Utility District (EBMUD), 2012, Water Supply Management Program 2040 Plan, April, page 6-4.
[164] 12 million gallons per day (MGD) divided by 230 MGD = 5 percent.
[165] CalEEMod defaults used for Medical Office Building, see Appendix A.
[166] CalEEMod defaults used for Medical Office Building, see Appendix A.
[167] CalEEMod defaults used for Medical Office Building, see Appendix A.

This represents approximately 0.014 percent of the permitted daily capacity of the Keller Canyon Landfill.[168] Therefore, Keller Canyon Landfill has sufficient capacity to accommodate the proposed project's solid waste disposal needs. The impact would therefore be *less than significant*.

The proposed project would have a significant environmental impact if it would lead to a breach of public standards relating to solid waste or litter control. The City of Lafayette has adopted a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), and a Non-Disposal Facility Element (NDFE) in compliance with AB939, the California Integrated Waste Management Act of 1989. Implementation of strategies and programs from these plans allowed the City to meet the State mandated waste diversion goal of 50 percent, and Lafayette reached its goal in 2019.[169] These programs are sufficient to ensure that future development in Lafayette would not compromise the ability to meet or perform better than the State-mandated target. Additionally, construction and any demolition debris associated with the project would be subject to LMC Chapter 5-6. construction and demolition debris recycling, requiring that a minimum of 50 percent of construction and demolition debris be diverted from landfill.[170] Compliance with applicable statutes and regulations would ensure that the impact would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

[168] 0.36 tons of solid waste per day divided by 3,500 tons (the Keller Landfill permitted daily capacity) X 100 = 0.014 percent.

[169] CalRecycle, 2020, Jurisdiction Diversion/Disposal Rate Detail - Central Contra Costa Solid Waste Authority, 2019, available online at https://www2.calrecycle.ca.gov/LGCentral/DiversionProgram/JurisdictionDiversionDetail?year=2019&jurisdictionID=624, accessed November 19, 2020.

[170] City of Lafayette Municipal Code, Title 5, Health and Sanitation, Chapter 5-6, Construction and Demolition Debris Recycling.

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	❒	❒	■	❒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	❒	❒	■	❒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	❒	❒	■	❒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	❒	❒	■	❒

EXISTING CONDITIONS

Wildland fire protection in California is the responsibility of either the State, local government, or the federal government. State Responsibility Areas (SRA) are the areas where the State of California has the primary financial responsibility for the prevention and suppression of wildland fires. The SRA includes a 31 million-acre area, which the CAL FIRE provides a basic level of wildland fire prevention and protection services. Local Responsibility Areas (LRA) include lands within incorporated cities, cultivated agriculture lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, or by CAL FIRE under contract to local government.[171] CAL FIRE determines fire hazard zones within the LRA using an extension of the SRA Fire Hazard Severity Zone model as the basis. The LRA hazard rating reflects flame and ember intrusion from adjacent wildlands and from flammable vegetation in the urban area.

The California Department of Forestry and Fire Protection (CAL FIRE) designates fire hazard severity zones (FHSZs) as authorized under California Government Code Sections 51175 et seq. CAL FIRE considers many factors such as fire history, existing and potential fuel (natural vegetation), flame length, blowing embers, terrain, and typical weather for the area. There are three types of FHSZs: moderate, high, and very high. According to California Office of Emergency Services, a Wildland-Urban Interface (WUI) is defined as any area where structures and other human development meet or intermingle within wildland vegetation.[172]

[171] California Department of Forestry and Fire Prevention (CAL FIRE). Frequently Asked Questions. http://www.fire.ca.gov/firepreventionfee/sra_faqs, accessed October 12, 2020.

[172] Cal OES. 2018. California State Hazard Mitigation Plan.

Developments in the wildland-urban interface exacerbate fire occurrence and fire spread in several ways, including:[173]

- Increased numbers of human-caused wildfires.
- Wildfires become harder to fight.
- Firefighting resources are diverted from containing the wildfire to protecting lives and homes.
- Letting natural fires burn becomes impossible; leading to buildup of fuel, increasing wildfire hazard further.

The City of Lafayette is within the "local-responsibility zones" and is classified as a VHFHSZ.[174] Additionally, the City of Lafayette lies within the "intermix" classification of the Wildland-Urban Interface zone and therefore, there is at a potential for increased fire hazard risk from wildfires.[175]

Applicable General Plan Policies and Programs

The City of Lafayette General Plan includes several goals and policies that relate to fire hazards in Chapter VI, Safety. This chapter include goals and policies to minimize risks to Lafayette residents and property from fire hazards that include:[176]

TABLE 4.20-1 LAFAYETTE GENERAL PLAN POLICIES AND PROGRAMS PERTAINING TO FIRE HAZARDS

Policy/ Implementation Program Number	Policy/Program Text
▪ Chapter VI: Safety	
▪ *Goal S-4*	*Minimize risks to Lafayette residents and property from fire hazards.*
▪ Policy S-4.1	Adequate Fire Protection: Enforce regulations and standards which contribute to adequate fire protection.
▪ Program S-4.1.5	Require development that includes private access roads or fire roads to provide access rights and keys to all gates to the Contra Costa County Fire Protection District.
▪ Program S-4.2.5	Permit new development only where there is adequate fire flow and adequate emergency vehicular access.
▪ Program S-4.2.6	Establish buffer areas for buildings in high fire risk areas. Buffers can include site planning techniques, vegetation management plans and defensible space.
▪ Policy S-4.3	Development and Mitigation Fees: Maintain development and mitigation fees at a level to adequately finance fire protection costs.

[173] Radeloff, Volker; Helmers, David; Kramer, H., et al. 2018. Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk. Proceedings of the National Academy of Sciences (PNAS): Volume 115 No. 13. https://www.pnas.org/content/pnas/115/13/3314.full.pdf, accessed on October 12, 2020.

[174] California Department of Fire, 2020, California Fire Hazard Severity Zone Viewer, available online at https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414, accessed October 20, 2020.

[175] University of Wisconsin at Madison, 2010, Wildland-Urban Interface (WUI) Change 1990-2010, available online at http://silvis.forest.wisc.edu/data/wui-change/, accessed October 20, 2020.

[176] City of Lafayette, 2002, General Plan – Chapter VI, available online at https://www.lovelafayette.org/Home/ShowDocument?id=1925, accessed November 19, 2020.

TABLE 4.20-1 LAFAYETTE GENERAL PLAN POLICIES AND PROGRAMS PERTAINING TO FIRE HAZARDS

Policy/ Implementation Program Number	Policy/Program Text
▪ Policy S-4.5	Vegetation Management Plan: Require development in a high fire risk area to have an approved vegetation management plan that includes native, drought tolerant, and fire-resistant species.
▪ Program S-4.5.1	All new development within mapped high fire hazard zones established by the Contra Costa County Fire District shall be required to develop and implement a Vegetation Management Plan. The Plan shall be part of the development application and approved by the Contra Costa County Fire District and the City. The Plan shall be developed by an arborist or vegetation management specialist. The City shall ensure that the actions recommended in the Plan are implemented in the future and should amend the Municipal Code to allow the City the right to conduct actions recommended in the Plan at the property owner's expense, if those actions are not performed in a timely fashion by the property owner. The Contra Costa County Fire District shall have the right to review properties to judge whether actions recommended in the Vegetation Management Plan are being properly implemented in a timely fashion.

Source: City of Lafayette, 2009, City of Lafayette General Plan – Chapter VI, Safety.

DISCUSSION

a)

The project site is located in a very high fire hazard severity zone, as is most of northern and western Lafayette.[177] The project site is within Zone 13 of the City's Emergency Operations Plan: Wildland Fire Evacuation Plan. Zone 13 is characterized as a heavily wooded residential neighborhood surrounded by low rolling hills and vegetation. Access is through a series of residential two lane roadways that also allows access for responders needed for emergencies and evacuation.[178] Project construction and operation would not restrict implementation of the Wildland Fire Evacuation Plan nor would it impede the emergency access or evacuation route of Zone 13 along Acalanes Road. The proposed project would not permanently close any roads, and no structures would impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. Access to the proposed project will be from a private driveway along Mount Diablo Road which will provide sufficient/egress for passenger vehicles that will routinely access the project site and project implementation shall not interfere with existing emergency evacuation plans or emergency response plans in the area. Therefore, there would be *no impact*.

[177] California Department of Fire, 2020, California Fire Hazard Severity Zone Viewer, available online at https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414, accessed October 20, 2020.

[178] City of Lafayette, 2018, Emergency Operations Plan: Wildland Fire Evacuation Plan, available online at https://www.lovelafayette.org/Home/ShowDocument?id=4054, accessed October 9, 2020.

b)

The slope of the project site is steep, with an elevation of 554 feet above mean sea level (amsl) at the southwestern corner of the site to 380 feet amsl at the northwestern corner and from 492 feet amsl at the southeastern corner to 427 feet amsl at the northwestern corner. The area surrounding the project site is hilly with the Lafayette Reservoir located just southeast of the project site. Prevailing winds blowing from the Pacific Ocean in combination with the presence of hills could push fires downslope towards the site, thereby exposing facility visitors to wildlife impacts. Nevertheless, building code fire safety requirements, design review by the CCCFPD, and relevant General Plan policies and Municipal Code ordinances would require the installation of alarm systems and fire suppression, the inclusion of fire-resistant building and roofing materials, the implementation of a Vegetation Management Plan, and payment of fire protection development fees. Compliance with these design specifications, fees, and policies would reduce this impact to *less than significant*.

c)

The project site is accessible from an unpaved road connecting to Mount Diablo Boulevard. The access road would be paved as part of the project; however, no new roads are included under the proposed project. The project would not involve the extension of utilities, rather, the proposed project would tie into existing utilities located along Mount Diablo Boulevard serviced by the City of Lafayette. Therefore, the project would not involve the construction of new roads or utilities that could exacerbate wildfire risk or result in temporary or ongoing impacts to the environment. The proposed project would be in compliance with fire safety and California building code requirements, as well as General Plan policies and Municipal Code ordinances. Construction BMPs would also be implemented to ensure temporary construction does not exacerbate fire risks at the project site or within the project area. Therefore, this impact would be *less than significant*.

d)

The proposed project would introduce visitors to an area currently fenced off in a heavily wooded within the City of Lafayette. This area is within a very high fire hazard severity zone and is at a slope which may contain landslide risks. As discussed in the Hydrology and Water Quality section, the proposed project introduces new impervious surfaces to the site that would increase the volume and rate of surface or stormwater runoff from the site which could cause flooding on or off site. Per City of Lafayette requirements, the project applicant would submit a Drainage Plan, pay a drainage impact fee, implement design BMPs, and submit an Erosion and Sediment Control Plan to ensure erosion, flooding, polluted runoff, or siltation to be minimal from development of the site. The project site is downsloped south to north and is not directly downstream of any established waterway that could result in substantial instability and post-fire flooding. Therefore, this impact would be *less than significant*.

MITIGATION MEASURES

No mitigation beyond compliance with the relevant policies, regulations, and programs identified in this section.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	❒	❒	■	❒
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)

As described in the Biological Resources section, through the implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-1c, and BIO-5 the project would not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal. Therefore, impacts would be *less than significant* with mitigation incorporated.

As described in the Cultural Resources section, Tribal Cultural Resources, and the Geology and Soils section, the proposed project would not eliminate important examples of the major periods of California history or prehistory because no historic or prehistoric, archaeological, or paleontological resources were identified on site. Nevertheless, the potential to encounter buried cultural materials during project development remains and therefore, the implementation of Mitigation Measures CULT-2, CULT-3, TRI-1, and GEO-6 would reduce impacts to a *less than significant* level.

b)

As discussed throughout the environmental checklist, the potential significant impacts of the proposed project would be mitigated to *less than significant* levels. Therefore, the proposed project would not be expected to contribute to significant cumulative impacts when considered along with other under the City's General Plan.

c)

As described in the Geology and Soils section, the proposed site is at risk of significant impacts due expansive soils. Expansive soils could create substantial direct or indirect risks to life or property. However, implementation of Mitigation Measure GEO-4 would ensure that the recommendations found within the Geotechnical Investigation would ensure that impacts from expansive soils would result in *less than significant* impacts.

As discussed throughout this IS, the proposed project would not result in a significant impact that could not be mitigated to a less-than-significant level. Thus, the proposed project would not cause environmental effects resulting in substantial adverse effects on human beings, either directly or indirectly, and therefore impacts would be *less than significant.*

5. Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Cancer Support Community Project. The purpose of the MMRP is to ensure that the mitigation measures identified in the IS for the proposed project are implemented. The MMRP includes the following information:

The full text of the mitigation measures;
The party responsible for implementing the mitigation measures;
The timing for implementation of the mitigation measure;
The agency responsible for monitoring the implementation; and
The monitoring action and frequency.

The City of Lafayette must adopt this MMRP, or an equally effective program, if it approves the proposed project with the mitigation measures that were adopted or made conditions of project approval.

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
BIOLOGICAL RESOURCES					
Mitigation Measure BIO-1a: Mitigation Measure BIO-1a: Adequate measures shall be taken to avoid inadvertent take of bird nests protected under the federal Migratory Bird Treaty Act and Department of Fish and Game Code when in active use. This shall be accomplished by taking the following steps: 1. If tree removal and initial construction is proposed during the nesting season (March 1 to August 31), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 7 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within 100 feet of proposed construction. The project site shall be resurveyed to confirm that no new nests have been established if vegetation removal and demolition has not been completed or if construction has been delayed or curtailed for more than 7 days during the nesting season. 2. If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to February 28), tree and vegetation removal and building construction may proceed with no restrictions. 3. If bird nests are found, an adequate setback shall be established around the nest location and vegetation removal, building demolition, and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the CDFW, and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the project site. 4. A report of findings shall be prepared by the qualified biologist and submitted to the City for review and approval prior to initiation of vegetation removal, building demolition and other construction during the nesting season (March 1 to August 31). The report shall either confirm absence of any active nests or should confirm that any young are located within a designated no-disturbance zone and construction can proceed. No report of findings is required if vegetation removal and other construction is initiated during the non-nesting season	Project Applicant	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities and during construction	Qualifying Biologist	Preconstruction Survey	Once for Survey; Ongoing if nesting birds identified and until they have left the nest

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
(September 1 to February 28) and continues uninterrupted according to the above criteria.					
Mitigation Measure BIO-1b: Adequate measures shall be taken to avoid inadvertent take of special-status bat species if present in trees on the project site. This shall be accomplished by taking the following steps. 5. A qualified biologist shall visually inspect trees to be removed for bat roosts within 7 days prior to their removal. The biologist shall look for signs of bats including sightings of live or dead bats, bat calls or squeaking, the smell of bats, bat droppings, grease stains or urine stains around openings in trees, or flies around such openings. Trees with multiple hollows, crevices, forked branches, woodpecker holes, or loose and flaking bark have the highest chance of occupation and shall be inspected the most carefully. 6. If signs of bats are detected, confirmation on presence or absence shall be determined by the qualified biologist, which may include night emergency or acoustic surveys. 7. Due to restrictions of the California Health Department, direct contact by workers with any bat is not allowed. The qualified bat biologist shall be contacted immediately if a bat roost is discovered during project construction. 8. If an active maternity roost is encountered during the maternity season (April 15 to August 31), the CDFW shall be contacted for direction on how to proceed and an appropriate exclusion zone established around the occupied tree until young bats are old enough to leave the roost without jeopardy. The size of the buffer would take into account: o Proximity and noise level of project activities; o Distance and amount of vegetation or screening between the roost and construction activities; and o Species-specific needs, if known, such as sensitivity to disturbance.	Project Applicant	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities and during construction	Qualifying Biologist	Preconstruction Survey	Once for Survey; Ongoing if nesting birds identified and until they have left the nest
Mitigation Measure BIO-1c: Adequate measures shall be taken to avoid inadvertent take of San Francisco dusky-footed woodrats on the project site. This shall be accomplished by taking the following steps. 9. A qualified biologist shall be retained to conduct a preconstruction survey for San Francisco dusky-footed woodrats, to determine whether any stick nests in the vicinity of proposed vegetation removal and development. The survey shall be performed within 30 days prior to vegetation removal and grading.	Project Applicant	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities and during construction	Qualifying Biologist	Preconstruction Survey	Once for Survey; Ongoing if nesting birds identified and until they have left the nest

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
10. If any nests are encountered within the limits of proposed grading and development, a trapping and relocation effort shall be conducted outside the breeding season (March 1 through August 31) to ensure any young are not inadvertently lost due to the destruction of the protective nest. 11. Any nests within the construction zone shall be relocated to locations retained as undeveloped open space on the project site, and individual woodrats released into their relocated nests. The trapping and relocation effort shall preferably be conducted within 7 days prior to grubbing and vegetation removal to prevent individual woodrats from moving back into the construction zone.					
Mitigation Measure BIO-5: The proposed project shall comply with City of Lafayette Tree Protection Ordinance, Chapter 6-17 of the Lafayette Municipal Code, and a Tree Protection and Replacement Program (Program) shall be developed by a certified arborist and implemented to provide for adequate protection and replacement of native and planted trees larger than 6 inches dbh possibly affected by proposed improvements. A category II permit shall be obtained for the removal of any "protected tree," and replacement plantings shall be provided as approved by the City. If permitted, an appropriate in-lieu fee shall be paid to the City of Lafayette as compensation for "protected trees" removed by the proposed project, where sufficient land area is not available on-site for adequate replacement. The Program shall include the following provisions: 12. Pursuant to the requirements of Section 6-1707.F of the Tree Protection and Preservation Ordinance, adequate measures shall be defined to protect all trees to be preserved. This shall include installation of temporary construction fencing at the perimeter of the protected area, restrictions on construction within the fenced areas unless approved as a condition of the application and performed under the supervision of the certified arborist, and prohibition on parking or storing of vehicles and other construction equipment within the protected area. 13. All grading, improvement plans, and construction plans prepared for potential future development for building permits shall clearly indicate trees proposed to be removed, altered, or otherwise affected by development construction. The tree information on grading and development plans shall indicate the number, size, species, assigned tree number and location of the dripline of all trees on the property that are to be retained/preserved.	Project Applicant	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities and during construction	Qualifying Biologist	Preconstruction Survey	Once for Survey; Ongoing if nesting birds identified and until they have left the nest

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
14. Details on relocation of any protected trees shall be defined as part of the Program. This shall include procedures for root system excavation, tree protection during relocation, planting bed preparation, short-term irrigation and monitoring, and compensatory mitigation if severely damaged during relocation or lost following planting.					
CULTURAL RESOURCES					
Mitigation Measure CULT-2: If prehistoric or historical archaeological deposits are discovered during project activities, all work within 25 feet of the discovery shall be redirected, the Planning Department shall be contacted directly, and a qualified archaeologist shall be contacted to assess the situation, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. Preservation in place shall be implemented if feasible. Excavation as mitigation shall be limited to those parts of resources that would be damaged or destroyed by the proposed project. Possible mitigation under CEQA emphasizes preservation in place measures, including planning construction to avoid archaeological sites, incorporating sites into open spaces, covering sites with stable soils, and deeding the site into a permanent conservation easement. Project personnel should not collect or move any archaeological materials or human remains and associated materials. Archaeological resources can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite tool-making debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone-milling equipment (e.g., mortars, pestles, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.	Project Applicant/ Construction Contractor	Before the commencement of construction	Qualified Archeologist and Construction Contractor	Plan Review and Approval	As needed if resources are unearthed
Mitigation Measure CULT-3: In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The City of Lafayette and the Contra Costa County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours, who would, in turn, notify the person the NAHC identifies as the Most Likely	Project Applicant/ Construction Contractor	During construction	Qualified Archeologist and Construction Contractor	Plan Review and Approval	As needed if resources are unearthed

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Descendants (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.					
GEOLOGY AND SOILS					
Mitigation Measure GEO-4: Implementation of the recommendations found in the Preliminary Geotechnical & Geologic Hazard Investigation, prepared by Cornerstone Earth Group, dated September 10, 2019.	Project Applicant/ Construction Contractor	During site preparation and before and during construction	Consulting Geotechnical Engineer and Project Applicant.	Plan Review and Approval	Plan Approval and during each phase of construction
Mitigation Measure GEO-6: If paleontological resources are encountered during grading or excavation, all construction activities within 50 feet must stop and the City shall be notified. A qualified archeologist shall inspect the findings within 24 hours of discovery. Cultural resources shall be recorded on California Department of Parks and Recreation (DPR) Form 523 (Historic Resource Recordation form). If it is determined that the proposed project could damage unique paleontological resources, mitigation shall be implemented in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines. Possible mitigation under Public Resources Code Section 21083.2 requires that reasonable efforts be made for resources to be preserved in place or left undisturbed. Preservation in place shall be implemented if feasible. Excavation as mitigation shall be limited to those parts of resources that would be damaged or destroyed by a project. Possible mitigation under CEQA emphasizes preservation in place measures, including planning construction to avoid archaeological sites, incorporating sites into parks and other open spaces, covering sites with stable soil, and deeding the site into a permanent conservation easement. Under CEQA Guidelines, when preservation in place is not feasible, data recovery through excavation shall be conducted with a data recovery plan in place. Therefore, when considering these possible mitigations, the City shall have a preference for preservation in place.	Project Applicant/ Construction Contractor	During construction	Consulting Geotechnical Engineer and Construction Contractor	Plan Review and Approval	Plan Approval and during each phase of construction

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Transportation and Traffic					
Mitigation Measure TRANS-2: The project applicant shall develop an employee travel demand management (TDM) program with measures designed to reduce employee commute vehicle trips by 37 percent, addressing both the baseline and cumulative exceedance in Impact TRAN-2. This mitigation measure focuses on trip generation as opposed to both trip generation and trip length, because trip lengths are largely out of the control of the project applicant. For the purposes of this mitigation, given the small number of employees (10 full time and 6 part time), an employee commute single-occupant vehicle trip generation rate of 16 X (1 - 0.37) = 10 single-occupant vehicle round-trips per day will be considered to reduce the impact to a less than significant level. Measures expected to be most effective in reducing employee commute vehicle trips for this project include: ▪ Subsidies for BART use and CCCTA bus use ▪ Provision of a shuttle, car service, or transportation network company service to connect employees to the Lafayette BART station (this service could be extended to clients to further reduce the project's VMT generation) ▪ Carpooling incentives ▪ Guaranteed ride home program for those using BART or the bus to commute ▪ Alternate work schedules (9/80 or 4/40) and telecommuting options The project applicant will monitor the employee commute vehicle trips with an annual survey and prepare a report for the City of Lafayette's review documenting measures implemented and employee commute modes used. After three years of full site operation, if the 10 round trips target has not been met, the applicant will develop additional measures to reduce employee commute single-occupant vehicle trips. Given the relatively small number of vehicle round trips required to reduce the impact to a less-than significant level (16 round trips to 10 round trips), compliance with the above mitigation measure will be considered to have reduced the impact to a less than significant level.	Project Applicant/ Construction Contractor	During Construction	Contractor/Project Applicant	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Tribal Cultural Resources					
Mitigation Measure TRI-1: Implementation of Mitigation Measures CULT-2 and CULT-3.	Project Applicant/ Construction Contractor	Before the commencement of construction	Consulting Archeologist and Project Applicant	Plan Review and Approval	As needed if resources are unearthed

6. Organizations and Persons Consulted

This Initial Study was prepared by the following consultants and individuals:

LEAD AGENCY

XXII. City of Lafayette

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ORGANIZATIONS AND PERSONS CONSULTED

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Appendices

Appendix A: Air Quality, Greenhouse Gases, and Energy

Appendix B: Biological Resources

Appendix C: Arborist Report

Appendix D: Geotechnical Engineering Investigation

Appendix E: Noise Analysis

Appendix F: Transportation

Appendix G: Tribal Cultural Resources AB 52 Consultation

Appendix A:
Air Quality, Greenhouse Gases, and Energy

5. Air Quality

Ambient air quality standards (AAQS) have been adopted at State and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of toxic air contaminants (TACs). The project site is in the San Francisco Bay Area Air Basin (SFBAAB) and is subject to the rules and regulations imposed by the Bay Area Air Quality Management District (BAAQMD), as well as the California AAQS adopted by the California Air Resources Board (CARB) and national AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below. The discussion also identifies the natural factors in the air basin that affect air pollution.

5.3 REGULATORY FRAMEWORK

5.3.1 Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, these pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, 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.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	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 such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: California Air Resources Board (CARB). 2016, October 1. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.
Notes: ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, 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 O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three 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 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. 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.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

5.3.2 Air Pollutants of Concern

A substance in the air that can cause harm to humans and the environment is known as an air pollutant. Pollutants can be in the form of solid particles, liquid droplets, or gases. In addition, they may be natural or man-made.

5.3.2.1 CRITERIA AIR POLLUTANTS

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death. [1]

Volatile Organic Compounds (VOC) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, the Air District has established a significance threshold for this pollutant.

Nitrogen Oxides (NO_x) are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure.[2] NO_2 acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm). [3]

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When SO_2 forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. [4]

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the San Francisco Bay Area Air Basin (SFBAAB or Air Basin), most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Two forms of fine particulates are now recognized and regulated. Inhalable coarse

[1] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
[2] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
[3] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
[4] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.

particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch). Diesel particulate matter (DPM) is also classified a carcinogen.

Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The EPA scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates. [5]

Ozone (O_3) is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees and materials such as rubber and fabrics.[6]

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Because emissions of lead are found only in projects that are permitted by the Air District, lead is not an air quality of concern for the proposed project.

5.3.2.2 TOXIC AIR CONTAMINANTS

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as

[5] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
[6] Bay Area Air Quality Management District, 2017. Revised California Environmental Quality Act Air Quality Guidelines.

a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[7] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

[7] California Air Resources Board (CARB). 1999. California Air Resources Board (CARB). Final Staff Report: Update to the Toxic Air Contaminant List. https://ww3.arb.ca.gov/toxics/id/finalstaffreport.htm.

Community Risk

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective*[8] to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3-butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

5.3.3 Bay Area Air Quality Management District

The Air District is the agency responsible for assuring that the National and California AAQS are attained and maintained in the Air Basin. Air quality conditions in the Air Basin have improved significantly since the Air District was created in 1955. The Air District prepares air quality management plans (AQMP) to attain ambient air quality standards in the Air Basin. The Air District prepares ozone attainment plans for the National O3 standard and clean air plans for the California O_3 standard. These air quality management plans are prepared in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The Air District adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Clean Air Plan) on April 19, 2017, making it the most recent adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

5.3.3.1 BAY AREA AIR QUALITY MANAGEMENT DISTRICT 2017 CLEAN AIR PLAN

2017 Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area

The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues in providing the framework for SFBAAB to achieve attainment of the California and National AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. Additionally, it sets a goal of reducing health risk impacts to local communities by 20 percent by 2020. Furthermore, the 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and

[8] California Air Resources Board (CARB). 2005, April. Air Quality and Land Use Handbook: A Community Health Perspective. https://www.arb.ca.gov/ch/handbook.pdf.

2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following [9]:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

5.3.3.2 BAAQMD'S COMMUNITY AIR RISK EVALUATION PROGRAM (CARE)

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk–weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory

[9] Bay Area Air Quality Management District. 2017, April 19. Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/plans-under- development.

accounted for CARB's diesel regulations. Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.[10]

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. The highest modeled risks were found east of San Francisco, near West Oakland, and the Maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo
- Western Alameda County along the Interstate 880 (I-880) corridor and the cities of Berkeley, Alameda, Oakland, and Hayward
- San Jose
- Eastern side of San Francisco
- Concord
- Vallejo
- Pittsburgh and Antioch

The project site is not within a CARE-program impacted community. The closest CARE community to the project site is the Eastern side of San Francisco impacted community.

The major contributor to acute and chronic non-cancer health effects in the Air Basin is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft, and areas with high acrolein emissions are near freeways and commercial and military airports.[11] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, BAAQMD does not conduct health risk screening analysis for acrolein emissions.[12]

5.3.3.3 AB 617 COMMUNITY ACTION PLANS

In July of 2017, Governor Brown signed Assembly Bill 617 to develop a new community focused program to more effectively reduce exposure to air pollution and preserve public health in environmental justice communities. The bill directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies.

On September 27, 2018, CARB approved BAAQMD's recommended communities for monitoring and emission reduction planning. The state approved communities for year 1 of the program, as well as communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation (CARE) areas, as well as areas with large sources of air pollution (refineries,

[10] Bay Area Air Quality Management District. 2014. Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective and Path Forward (2004–2013), April.

[11] Bay Area Air Quality Management District (BAAQMD), 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area.

[12] Bay Area Air Quality Management District (BAAQMD), 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines.

seaports, airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[13]

- Year 1 Communities:
  - West Oakland. The West Oakland community was selected for BAAQMD's first Community Action Plan. In 2017, cancer risk in from sources in West Oakland (local sources) was 204 in a million. The primary sources of air pollution in West Oakland include heavy truck and cars, port and rail sources, large industries, and to a lesser extent other sources such as residential sources (i.e., woodburning). The majority (over 90 percent) of cancer risk is from diesel $PM_{2.5}$.[14]
    - Richmond: Richmond was selected for a community monitoring plan in year 1 of the AB 617 program. The Richmond area is in western Contra Costa County and includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. The primary goals of the Richmond monitoring effort are to leverage historic and current monitoring studies, to better characterize the area's mix of sources, and to more fully understand the associated air quality and pollution impact. [15]
- Year 2-5 Communities:
  - East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, Tri-Valley, and Vallejo are slated for action in years 2-5 of the AB 617 program. [16]

5.3.3.4 REGULATION 7, ODOROUS SUBSTANCES

Sources of objectionable odors may occur within the City. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall 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 the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

5.3.3.5 OTHER BAAQMD REGULATIONS

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to individual development projects:

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[13] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[14] BAAQMD. 2019, October 2. West Oakland Community Action Plan.. https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan

[15] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[16] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

- BAAQMD, Regulation 2, Rule 2, New Source Review
- BAAQMD, Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- BAAQMD Regulation 6, Rule 1, General Requirements
- BAAQMD Regulation 6, Rule 2, Commercial Cooking Equipment
- BAAQMD Regulation 8, Rule 3, Architectural Coatings
- BAAQMD Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- BAAQMD Regulation 8, Rule 7, Gasoline Dispensing Facilities
- BAAQMD Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)
- BAAQMD Regulation 11, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities

5.3.4 Plan Bay Area

Plan Bay Area is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. The 2040 update to Plan Bay Area was adopted jointly by the ABAG and MTC on July 26, 2017. The 2040 Plan Bay Area update serves as a limited and focused update to the 2013 Plan Bay Area, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years.[17] It lays out a development scenario for the region, which when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by the Air Resources Board.

5.3.5 Contra Costa Transportation Authority (CCTA)

The Contra Costa Transportation Authority (CCTA) is the designated congestion management agency for the county. CCTA's congestion management plan (CMP) identifies strategies to respond to future transportation needs, identifies procedures to alleviate and control congestion, and promotes countywide solutions. Pursuant to the EPA's transportation conformity regulations and the Bay Area Conformity State Implementation Plan (also known as the Bay Area Air Quality Conformity Protocol), the CMP is required to be consistent with the MTC planning process, including regional goals, policies, and projects for the regional transportation improvement program (RTIP). MTC cannot approve any transportation plan, program, or project unless these activities conform to the State Implementation Plan (SIP).

ENVIRONMENTAL SETTING

5.3.6 San Francisco Bay Area Air Basin

The BAAQMD is the regional air quality agency for the SFBAAB, which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.[18]

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[17] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. Plan Bay Area 2040 Plan.

[18] This section describing the air basin is from Bay Area Air Quality Management District, 2017, May, Appendix C: Sample Air Quality Setting, in *California Environmental Quality Act Air Quality Guidelines*.

5.3.6.1 METEOROLOGY

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits, resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast.

The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of uvpwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

5.3.6.2 WIND PATTERNS

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3:00 p.m. to 4:00 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

5.3.6.3 TEMPERATURE

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-

scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons the temperatures at the coast can be 35 degrees Fahrenheit (ºF) cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10ºF.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large. The climatological station nearest to the project site with temperature data is the Orinda Bowman, California Monitoring Station (ID No. 046502). The lowest average temperature is reported at 34.3°F in January, and the highest average temperature is 82.5°F in September.[19]

5.3.6.4 PRECIPITATION

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e. air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, when mixing and ventilation are low and pollutant levels build up. Rainfall historically averages 30.53 inches per year in the project area. [20]

5.3.6.5 WIND CIRCULATION

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

5.3.6.6 INVERSIONS

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e. the vertical depth in the atmosphere available for diluting air contaminants near the ground. There are two types of inversions that occur regularly in the

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[19] Western Regional Climate Center (WRCC). 2020, November 13 (accessed). Orinda Bowman, California ([Station ID] 046502): Period of Record Monthly Climate Summary, 08/01/1944 to 06/30/1960. Western U.S. Climate Summaries. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6502.

[20] Western Regional Climate Center (WRCC). 2020, November 13 (accessed). Orinda Bowman, California ([Station ID] 046502): Period of Record Monthly Climate Summary, 08/01/1944 to 06/30/1960. Western U.S. Climate Summaries. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6502.

SFBAAB. Elevation inversions are more common in the summer and fall, and radiation inversions are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

5.3.7 Existing Ambient Air Quality

5.3.7.1 ATTAINMENT STATUS OF THE SFBAAB

Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme. The attainment status for the air basin is shown in Table 2. The air basin is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

Table 2 Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin

Pollutant	State	Federal[1]
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment
PM_{10}	Nonattainment	Unclassified/Attainment
$PM_{2.5}$	Nonattainment	Unclassified/Attainment
CO	Attainment	Attainment
NO_2	Attainment	Unclassified
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

Source: California Air Resources Board, 2019, August, October. Area Designations Maps: State and National. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.
[1] Federal designations current as of June 30, 2020

5.3.7.2 EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project area have been documented and measured by the BAAQMD. BAAQMD has 24 permanent monitoring stations located around the Bay Area. The nearest station is the Concord-2975 Treat Blvd Monitoring Station, which monitors O_3, NO_2, PM_{10} and $PM_{2.5}$. Data from this monitoring stations is summarized in Table 3. The data show regular violations of the State and federal O_3 standards and federal $PM_{2.5}$ standard.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2015	2016	2017	2018	2019
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	1	0	0	0
State 8-hour ≥ 0.07 ppm (days exceed threshold)	2	2	0	0	2
Federal 8-Hour > 0.075 ppm (days exceed threshold)	0	0	0	0	0

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2015	2016	2017	2018	2019
Max. 1-Hour Conc. (ppm)	0.088	0.095	0.082	0.077	0.092
Max. 8-Hour Conc. (ppm)	0.073	0.074	0.070	0.061	0.074
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)					
Max. 1-Hour Conc. (ppb)	0.0330	0.0336	0.0406	0.0383	0.0406
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	0	5	18	10	19
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m^3)	22.5	80.4	139.2	93.4	93.1
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	0	0	6	14	0
Max. 24-Hour Conc. (µg/m^3)	31.0	20.7	89.4	180.0	28.2

Source: California Air Resources Board (CARB). 2020. Air Pollution Data Monitoring Cards (2015, 2016, 2017, 2018, and 2019). https://www.arb.ca.gov/adam/topfour/topfour1.php

Notes: ppm: parts per million; parts per billion, µg/m^3: micrograms per cubic meter. Data for obtained from the Concord-2975 Treat Blvd Monitoring Station.

5.3.7.3 EXISTING EMISSIONS

The project site is currently undeveloped and, therefore, does not generate any air pollutant emissions associated with the burning of fossil fuels in cars (mobile sources); energy use for cooling, heating, and cooking (energy); and landscape equipment use (area sources).

5.3.8 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population. The nearest sensitive receptors to the project site are the single-family residences to the east of the project site and Contra Costa Jewish Day School to the northeast.

5.4 METHODOLOGY

The BAAQMD "CEQA Air Quality Guidelines" were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA

requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of the December 17, 2015 Supreme Court decision (*California Building Industry Association v BAAQMD*), which clarified that CEQA does not require an evaluation of impacts of the environment on a project.[21]

5.4.1 Criteria Air Pollutant Emissions

The proposed project qualifies as a project-level project under BAAQMD's criteria. For project-level analyses, BAAQMD has adopted screening criteria and significance criteria that would be applicable to the proposed project. If a project exceeds the screening level, it would be required to conduct a full analysis using BAAQMD's significance criteria.[22]

Regional Significance Criteria

The BAAQMD criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4. Criteria for both construction and operational phases of the project are shown.

Table 4 BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

[21] On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning contained in the BAAQMD 2011 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA Guidelines. (*California Building Industry Association versus BAAQMD, Case No. A135335 and A136212 (Court of Appeal, First District, August 13, 2013*).)

[22] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines.

The BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the Air Basin and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, BAAQMD prepares the Clean Air Plan that details regional programs to attain the AAQS. Mass emissions in Table 4 are not correlated with concentrations of air pollutants, but contribute to the cumulative air quality impacts in the Air Basin. The thresholds are based on the trigger levels for the federal New Source Review (NSR) Program. The NSR Program was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. Projects that do not exceed the BAAQMD regional significance thresholds in Table 4 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions in Table 4 emissions would cumulatively contribute to the nonattainment status and would contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 4 it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above.

The BAAQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978. Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the Bay Area exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standard are met in the Air Basin.

Local CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- Project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.

- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g. tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[23]

Odors

The BAAQMD thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall 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 the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance. In addition, BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[24]

5.4.2 Toxic Air Contaminants

The BAAQMD significance thresholds for local community risk and hazard impacts apply to the siting of a new source. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*California Building Industry Association v. Bay Area Air Quality Management District [2015] 62 Cal.4th 369 [Case No. S213478]*). While CEQA does not require an environmental evaluation to analyze the environmental effects of attracting development and people to an area, the environmental evaluation must analyze the impacts of environmental hazards on future users when the proposed project exacerbates an existing environmental hazard or condition or if there is an exception to this exemption identified in the Public Resources Code. Schools, residential, commercial, and office uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects.

[23] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

[24] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines.

For assessing community risk and hazards, sources within a 1,000-foot radius are considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources.[25,26]

The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the surrounding residential receptors. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[27] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.[28]

The project threshold identified below is applied to the proposed project's construction phase emissions:

Community Risk and Hazards – Project

Project-level construction emissions of TACs or $PM_{2.5}$ from the proposed project to individual sensitive receptors within 1,000 feet of the project site that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- Non-compliance with a qualified Community Risk Reduction Plan;
- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e. chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution;
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant, cumulatively considerable contribution.[29]

Community Risk and Hazards – Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone.

A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds the following:

- Non-compliance with a qualified Community Risk Reduction Plan; or
- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[30]

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25 Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

26 Bay Area Air Quality Management District. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards.

27 Bay Area Air Quality Management District. 2010. Screening Tables for Air Toxics Evaluations during Construction.

28 Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

29 Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

Current BAAQMD guidance recommends the determination of cancer risks using the Office of Environmental Health Hazard Assessment's (OEHHA) methodology, which was originally adopted in 2003.[31,32] In February 2015, OEHHA adopted new health risk assessment guidance which includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rates.[33] However, BAAQMD has not formally adopted the new OEHHA methodology into their CEQA guidance. To be conservative, the cancer risks associated with project implementation and significance conclusions were determined using the new 2015 OEHHA guidance for risk assessments.

[30] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

[31] Bay Area Air Quality Management District. 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards.

[32] Office of Environmental Health Hazard Assessment. 2003. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

[33] Office of Environmental Health Hazard Assessment. 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

6. Greenhouse Gas Emissions

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[34] carbon (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[35, 36] The major GHG are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.
  - ***Chlorofluorocarbons (CFCs***) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

[34] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

[35] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (California Air Resources Board (CARB). 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

[36] Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/03/WGI_TAR_full_report.pdf.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.[37,38]

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 250 MT of CO_2.[39,40]

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[37] Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/03/WGI_TAR_full_report.pdf.

[38] US Environmental Protection Agency (USEPA). 2019. Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.

[39] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

[40] Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.

Table 5 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Carbon Dioxide (CO_2)	Methane[1] (CH_4)	Nitrous Oxide (N_2O)
Second Assessment			
Atmospheric Lifetime (Years)	50 to 200	12 (±3)	120
Global Warming Potential Relative to CO_2[2]	1	21	310
Fourth Assessment			
Atmospheric Lifetime (Years)	50 to 200	12	114
Global Warming Potential Relative to CO_2[2]	1	25	298
Fifth Assessment[3]			
Atmospheric Lifetime (Years)	50 to 200	12	121
Global Warming Potential Relative to CO_2[2]	1	28	265

Source: Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995 https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_I_full_report.pdf; Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/ar4_syr_full_report.pdf; Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.

Notes:

1 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

2 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

3 The GWP values in the IPCC's Fifth Assessment Report (2013)[41] reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2.

6.3 CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2020, the statewide GHG emissions inventory was updated for 2000 to 2018 emissions using the GWPs in IPCC's AR4.[42] Based on these GWPs, California produced 425.3 $MMTCO_2e$ GHG emissions in 2018. California's transportation sector was the single largest generator of GHG emissions, producing 39.9 percent of the state's total emissions. Industrial sector emissions made up 21.0 percent, and electric power generation made up 14.8 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (9.7 percent), agriculture and forestry (7.7 percent) high GWP (4.8 percent), and recycling and waste (2.1 percent).[43]

Since the peak level in 2004, California statewide GHG emissions dropped below the 2020 GHG limit of 431 $MMCO_2e$ in 2016 and have remained below the 2020 GHG limit since then. In 2018, emissions from routine GHG emitting activities statewide were 6 $MMTCO_2e$ lower than the 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.0 $MTCO_2e$ per person to 10.7 $MTCO_2e$ per person in 2018, a 24 percent decrease. Transportation emissions decreased in 2018 compared to the previous year, which is the first year over year decrease since 2013. Since 2008, California's electricity sector has followed an overall downward trend in emissions. In 2018, solar power generation has continued its rapid growth since 2013. Emissions from high-GWP gases increased 2.3 percent in 2018 (2000-2018 average year-over-year increase is 6.8 percent), continuing the increasing trend as they replace Ozone Depleting Substances

41 Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.

42 Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.

43 California Air Resources Board (CARB). 2020. 2020 California Greenhouse Gas 2000-2018 Emissions Trends and Indicators Report. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf.

(ODS) being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product (GDP)) is declining, representing a 43 percent decline since the 2001 peak, while the state's GDP has grown 59 percent during this period.[44]

6.4 HUMAN INFLUENCE ON CLIMATE CHANGE

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation.[45] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[46] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[47]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

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44 California Air Resources Board (CARB). 2020. 2020 California Greenhouse Gas 2000-2018 Emissions Trends and Indicators Report. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf.

45 Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

46 California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

47 Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

6.5 POTENTIAL CLIMATE CHANGE IMPACTS FOR CALIFORNIA

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide, average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada.[48] The years from 2014 through 2016 have shown unprecedented temperatures with 2014 being the warmest.[49] By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels. [50]

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[51] Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, with unprecedented dry years occurring in 2014 and 2015. [52] Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015.[53] According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 6 and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

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[48] California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[49] Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.

[50] California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[51] California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

[52] Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.

[53] Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.

Table 6 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: California Energy Commission (CEC). 2006. Our Changing Climate: Assessing the Risks to California. 2006 Biennial Report. CEC-500-2006-077. California Climate Change Center; California Energy Commission (CEC). 2009, May. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077; California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California; and California Natural Resources Agency (CNRA). 2014, July. Safeguarding California: Reducing Climate Risk: An Update to the 2009 California Climate Adaptation Strategy. https://resources.ca.gov/CNRALegacyFiles/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf.

1.1 REGULATORY FRAMEWORK

6.5.1 Federal Regulations

The US Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[54]

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions; they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

6.5.1.1 US MANDATORY REPORTING RULE FOR GREENHOUSE GASES (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ or more per year are required to submit an annual report.

6.5.1.2 UPDATE TO CORPORATE AVERAGE FUEL ECONOMY STANDARDS (2021 TO 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 MPG and 202 g/mi of CO_2 emissions for model year 2026 vehicles.[55] However, consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle greenhouse gas emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means

[54] US Environmental Protection Agency (USEPA). 2009, December. EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity. https://archive.epa.gov/epapages/newsroom_archive/newsreleases/08d11a451131bca585257685005bf252.html.

[55] The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks: Final Rule, Vol. 85 Federal Register, No. 84 (April 30, 2020).

that the auto companies party to the voluntary agreement will only sell cars in the United States that meet the CAFE standards established in 2021 for model years 2017 to 2025.[56]

6.5.1.3 EPA REGULATION OF STATIONARY SOURCES UNDER THE CLEAN AIR ACT (ONGOING)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large stationary sources of emissions such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump's Energy Independence Executive Order. It officially rescinds the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants.

6.5.2 State Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Orders S-03-05 and B-30-15, Assembly Bill (AB) 32, Senate Bill (SB) 32, and SB 375.

6.5.2.1 EXECUTIVE ORDER S-03-05

Executive Order S-03-05, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

6.5.2.2 ASSEMBLY BILL 32, THE GLOBAL WARMING SOLUTIONS ACT

State of California guidance and targets for reductions in GHG emissions are generally embodied in the Global Warming Solutions Act, adopted with passage of AB 32. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 emissions reduction goal established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The first Scoping Plan was adopted by CARB on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state.[57] To effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year,

[56] California Air Resources Board (CARB). 2019, September 5 (accessed). California and major automakers reach groundbreaking framework agreement on clean emission standards. https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission.

[57] California Air Resources Board (CARB). 2008, December. Climate Change Scoping Plan. https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/document/adopted_scoping_plan.pdf.

prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted May 22, 2014, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 $MMTCO_2e$. [58]

As identified in the Update to the Scoping Plan, California is on track to meet the goals of AB 32. The update also addresses the state's longer-term GHG goals in a post-2020 element. The post-2020 element provides a high-level view of a long-term strategy for meeting the 2050 GHG goal, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.[59] CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit. [60]

6.5.2.3 EXECUTIVE ORDER B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions in the state to 40 percent below 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

6.5.2.4 SENATE BILL 32 AND ASSEMBLY BILL 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197, making the Executive Order goal for year 2030 into a statewide, mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

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[58] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

[59] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

[60] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB approved the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[61]

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten emissions limits for criteria air pollutants and toxic air contaminants on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero-emission (ZE) buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency by 25 percent by 2030 and utilizes near-zero emissions technology and deployment of ZE trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to these statewide strategies, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and recommended local actions to reduce GHG emissions—for example, statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt quantitative, locally appropriate goals that align with the statewide per capita targets and sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the

[61] California Air Resources Board (CARB). 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the "business as usual" yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the policies that are already required and in place to achieve the 2020 limit, as shown in Table 7. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 7 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	260
Gap to 2030 Target with Known Commitments	60

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

Table 8 provides estimated GHG emissions by sector compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

Table 8 2017 Scoping Plan Emissions Changes by Sector to Achieve the 2030 Target

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink[a]	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	24-79	NA
Total	431	260	-40%

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[a] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

6.5.2.5 SENATE BILL 375 – SUSTAINABLE COMMUNITIES STRATEGY

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction in GHG emissions from 2005 by 2020, and 15 percent per capita reduction from 2005 levels by 2035.[62]

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted

[62] California Air Resources Board. 2010. Staff Report, Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375, August.

sustainable communities strategies (SCS). As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 $MMTCO_2e$ in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the MTC/ABAG region are a 10 percent per capita GHG reduction in 2020 from 2005 levels (compared to 7 percent under the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15 percent).[63]

6.5.2.6 OTHER APPLICABLE MEASURES

Transportation

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

Executive Order S-1-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are

[63] California Air Resources Board (CARB). 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/inventory/data/data.htm.

ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions 80 percent below 1990 levels.

Executive Order N-79-20

On September 23, 2020 Governor Newsom signed Executive Order N-79-20 which identifies a goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. Additionally, this Executive Order identified fleet goals for trucks of 100 percent of drayage trucks be zero emissions by 2035 and 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045, for all operations where feasible. Additionally, the Executive Order identifies a goal for the State to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

Renewables Portfolio Standard

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which supersedes the SB 350 requirements. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. Additionally, SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive

Order B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Energy Efficiency

California Building Standards Code – Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2019 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect on January 1, 2020.

The 2019 standards move towards cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of 3 stories and less. Four key areas the 2019 standards will focus on include 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements.[64] Based on a study of the statewide impacts of the 2019 changes to the California Energy Efficiency Standards, the reductions for newly constructed nonresidential buildings are estimated to total 10.7 percent for electricity and 1 percent for natural gas.[65]

California Green Building Standards Code – CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[66] The mandatory provisions of CALGreen became effective January 1, 2011. The 2019 CALGreen standards became effective January 1, 2020.

Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

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[64] California Energy Commission (CEC). 2018. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first.

[65] NORESCO. 2018, June 29. 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings.

[66] The green building standards became mandatory in the 2010 edition of the code.

2006 Appliance Energy Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006 and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste

AB 939

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.208 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

AB 1826

In October of 2014, Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

Water Efficiency

SBX7-7

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

AB 1881

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Strategy

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.[67] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

[67] California Air Resources Board (CARB). 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

6.5.3 Regional Regulations

Plan Bay Area, Strategy for a Sustainable Region

Plan Bay Area 2040 is the Bay Area's RTP/SCS and was adopted jointly by ABAG and MTC on July 26, 2017. It lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. Plan Bay Area 2040 is a limited and focused update to the 2013 Plan Bay Area, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years.

As part of the implementing framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas in existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated in PDAs. Per the Final Plan Bay Area 2040, while the projected number of new housing units and new jobs within PDAs would increase to 629,000 units and 707,000 jobs compared to the adopted Plan Bay Area 2013, its overall share would be reduced to 77 percent and 55 percent.[68] However, Plan Bay Area 2040 remains on track to meet a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.[69] The proposed project site is not within a PDA.[70]

Bay Area Clean Air Plan

BAAQMD adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate on April 19, 2017. The 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.[71]

A comprehensive multipollutant control strategy has been developed to be implemented in the next 3 to 5 years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover the following

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[68] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017, March. Plan Bay Area 2040 Plan.

[69] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017, March. Plan Bay Area 2040 Plan.

[70] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2020, September 24 (accessed). Priority Development Areas (Plan Bay Area 2040) ArcGIS. https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=56ee3b41d6a242e5a5871b043ae84dc1.

[71] Bay Area Air Quality Management District, 2017. Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed November 21, 2019.

sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Bay Area Commuter Benefits Program

Under Air District Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the BAAQMD are required to register and offer commuter benefits to employees. In partnership with the BAAQMD and MTC, the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

6.5.4 Local Regulations

6.5.4.1 CITY OF LAFAYETTE ENVIRONMENTAL ACTION PLAN

The City of Lafayette adopted the Environmental Action Plan (EAP) in 2011 to achieve the GHG reduction target of AB 32 for target year 2020. [72] The EAP serves as a guide for the City to think, act, and plan more sustainably by helping to understand the cause of environmental problems and developing criteria for evaluating the long-term impacts of the City's decisions. The strategies outlined in the EAP seek to not only reduce GHG emissions, but also provide energy, water, fuel, and cost savings for the City.[73] The goals and programs established by the City's EAP aim to conserve resources as they pertain to solid waste, water, energy use, and construction and promote community health. The EAP also offers strategies to reduce GHG emissions from transportation and promotes preservation and enhancement of open spaces.

[72] City of Lafayette. 2011. City of Lafayette Environmental Action Plan. https://www.lovelafayette.org/home/showdocument?id=4138.

[73] County of Contra Costa. 2015, December 15. Contra Costa County Climate Action Plan. https://www.contracosta.ca.gov/DocumentCenter/View/39791/Contra-Costa-County-Climate-Action-Plan.

6.6 ENVIRONMENTAL SETTING

6.6.1 Existing Emissions

The project site is currently undeveloped and, therefore, does not generate any GHG emissions associated with the burning of fossil fuels in cars (mobile sources); energy use for cooling, heating, and cooking (energy); water use; wastewater and solid waste generation; and landscape equipment use (area sources).

6.7 METHODOLOGY

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential GHG emissions impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background information.

6.7.1 BAAQMD Standards of Significance

BAAQMD has adopted CEQA Guidelines to evaluate GHG emissions impacts from development projects.[74] Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and nonbiogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 is derived from living biomass (e.g., organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. BAAQMD is currently updating their CEQA Guidelines. Under the 2017 CEQA Guidelines, BAAQMD identified a tiered approach for assessing GHG emissions impacts of a project:

- **Consistency with a Qualified Greenhouse Gas Reduction Strategy.** If a project is within the jurisdiction of an agency that has a "qualified" GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy.

- **BAAQMD Screening Level Sizes.** BAAQMD has adopted screening criteria for development projects that would be applicable for the proposed project based on the square footage, units, acreage, students, and/or employees generated by a project. Typical projects that meet the screening criteria do not generate emissions greater than 1,100 $MTCO_2e$ and would not generate significant GHG emissions.

- **Brightline Screening Threshold.** BAAQMD adopted screening criteria for development projects of 1,100 $MTCO_2e$ per year that would be applicable for the proposed project. If a project exceeds the BAAQMD Guidelines' GHG screening-level sizes or screening criteria of 1,100 $MTCO_2e$.

[74] Bay Area Air Quality Management Agency. 2017. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed April 9, 2020.

- **Efficiency Threshold.** AB 32 requires the statewide GHG emission to be reduced to 1990 levels by 2020. On a per-capita basis, that means reducing the annual emissions of 14 tons of carbon dioxide for every person in California down to about 10 tons per person by 2020.[75] Hence, BAAQMD's per capita significance threshold is calculated based on the State's land use sector emissions inventory prepared by CARB and the demographic forecasts for the 2008 Scoping Plan. The land use sector GHG emissions for 1990 were estimated by BAAQMD, as identified in Appendix D of the BAAQMD CEQA Guidelines, to be 295.53 $MMTCO_2e$ and the 2020 California service population (SP) to be 64.3 million. Therefore, the threshold that would ensure consistency with the GHG reduction goals of AB 32 is estimated at 4.6 $MTCO_2e$ per service population per year ($MTCO_2e$/SP/yr) for year 2020.[76]

Based on the adopted 1,100 $MTCO_2e$ per year brightline screening threshold under AB 32 (i.e., 1990 levels by 2020), and the GHG reduction target for year 2030 established under SB 32 (i.e., 40 percent 1990 levels by 2030), a threshold of 660 $MTCO_2e$ per year is utilized for the proposed project. If project emissions are below this brightline screening threshold, GHG emissions impacts would be considered less than significant.

[75] California Air Resources Board, 2008. Climate Change Proposed Scoping Plan, a Framework for Change.

[76] Bay Area Air Quality Management Agency. 2017. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed April 9, 2020.

Appendix B:
Biological Resources

Appendix B Table B.1: Plant Species Observed During Botanical Survey
Cancer Support Community Project Site, Lafayette, California
Surveys Conducted on May 15 and July 7, 2020

Scientific name	**Common name**	**Native**
Aesculus californica	California buckeye	yes
Agoseris grandiflora	Mountain dandelion	yes
Allium sp.	Wild onion	yes
Artemisia douglasiana	California mugwort	yes
Avena barbata	Slender wild oats	no
Avena fatua	Wild oats	no
Baccharis pilularis ssp. *consanguinea*	Coyote brush	yes
Bromus carinatus var. *carinatus*	California brome	yes
Bromus caroli-henrici	Weedy brome	no
Bromus diandrus	Ripgut brome	no
Bromus hordeaceus	Soft chess	no
Bromus laevipes	Chinook brome	yes
Bromus madritensis	Madrid brome	no
Calystegia subacaulis	Hill morning glory	yes
Carduus pycnocephalus	Italian thistle	no
Carex gracilior	Slender sedge	yes
Chlorogalum pomeridianum	Soap plant	yes
Cirsium vulgare	Bull thistle	no
Conium maculatum	Poison hemlock	no
Convolvulus arvensis	Bindweed	no
Cynoglossum grande	Pacific hound’s tongue	yes
Cynosurus echinatus	Bristly dogtail grass	no
Dipsacus sativus	Indian teasel	no
Dittrichia graveolens	Stinkwort	no
Drymocallis glandulosa var. *glandulosa*	Sticky cinquefoil	yes
Dryopteris arguta	California wood fern	yes
Elymus glaucus	Blue wild rye	yes
Epilobium brachycarpum	Willowherb	yes
Erodium botrys	Broad leaf filaree	no
Erodium cicutarium	Red stem filaree	no
Eschscholzia californica	California poppy	yes
Eurybia radulina	Roughleaf aster	yes
Festuca myuros	Rattail sixweeks grass	no
Festuca perennis	Italian ryegrass	no
Foeniculum vulgare	Sweet fennel	no
Galium aparine	Common bedstraw	yes
Galium parisiense	Wall bedstraw	no
Geranium dissectum	Cut-leaf geranium	no
Geranium molle	Woodland geranium	no
Geranium purpureum	Herb robert	no
Helminthotheca echioides	Bristly ox-tongue	no
Heteromeles arbutifolia	Toyon	yes

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Cancer Support Community Project Site, Lafayette, California
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Hirschfeldia incana	Shortpod mustard	no
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	no
Hordeum murinum ssp. *leporinum*	Lepor barley	no
Lactuca virosa	Bitter lettuce	no
Lathyrus vestitus	Pacific pea	yes
Lupinus bicolor	Miniature lupine	yes
Lysimachia arvensis	Scarlet pimpernel	no
Madia gracilis	gumweed	yes
Marah fabaceus	Manroot	yes
Medicago polymorpha	Bur-clover	no
Melica torreyana	Torrey's melic	yes
Melilotus indicus	Annual yellow sweetclover	no
Pentagramma triangularis	Goldenback fern	yes
Phalaris aquatica	Harding grass	no
Pinus sp.	Pine tree	
Prunus sp.	Prune	no
Quercus agrifolia	Coast live oak	yes
Quercus kelloggii	Black oak	yes
Quercus lobata	Valley oak	yes
Raphanus sativus	Wild radish	no
Rubus ursinus	California blackberry	yes
Rumex crispus	Curly dock	no
Sanicula crassicaulis	Gamble weed	yes
Sherardia arvensis	Field madder	no
Sisyrinchium bellum	Blue eyed grass	yes
Sonchus asper ssp. *asper*	Prickly sow thistle	no
Sonchus oleraceus	Common sow thistle	no
Stachys rigida var. *quercetorum*	Rough hedgenettle	yes
Stellaria media	chickweed	no
Stipa lepida	Foothill needle grass	yes
Symphoricarpos albus var. *laevigatus*	Common snowberry	yes
Torilis arvensis	Field hedgeparsley	no
Toxicodendron diversilobum	Poison oak	yes
Trifolium dubium	Little hop clover	no
Trifolium hirtum	Rose clover	no
Trifolium incarnatum	Crimson clover	no
Triteleia laxa	Ithuriel spear	yes
Vicia sativa ssp. *nigra*	Common vetch	no
Vicia tetrasperma	Lentil vetch	no
Vicia villosa	Hairy vetch	no
Umbellularia californica	California bay tree	yes

Nomenclature according to on-line Jepson eFlora and Calflora

Surveys conducted by Zoya Akulova-Barlow and James Martin

Appendix B Table B.2
Special-Status Plant Species Known or Suspected to Occur in Lafayette Vicinity

Scientific Name/ Common Name	Status	Habitat	Blooming Period
Amsinckia grandiflora large-flowered fiddleneck	Fed: Endangered State: Endangered CNPS: List 1B.1	Cismontane woodland, valley and foothill grassland	April-May
Amsinckia lunaris bent-flowered fiddleneck	Fed: None State: CEQA CNPS: List 1B.2	Cismontane woodland; valley and foothill grassland	March-June
Androsace elongata ssp. *acuta* California androsace	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, coastal scrub	March-June
Apocynum cannabinum Dogbane; Indian hemp	Fed: None State: CEQA CNPS: None East Bay CNPS: A2	Freshwater marsh, riparian	April-Oct
Arctostaphylos pallida pallid manzanita	Fed: Threatened State: Endangered CNPS: List 1B.1	Broadleaved upland forest, chaparral, cismontane woodland (siliceous shale)	Dec-March
Astragalus tener var. *tener* alkali milk vetch	Fed: None State: None CNPS: List 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools (alkaline)	March-June
Balsamorhiza macrolepis var. *macrolepis* big-scale balsamroot	Fed: None State: CEQA CNPS: List 1B.2	Cismontane woodland, valley and foothill grassland (sometimes serpentinite)	March-June
Blepharizonia plumosa big tarplant	Fed: None State: CEQA CNPS: List 1B.1	Valley and foothill grassland	July-Oct
Calandrinia breweri Brewer's calandrinia	Fed: None State: CEQA CNPS: List 4.2	Chaparral, coastal scrub	March-June
California macrophylla round-leaved filaree	Fed: None State: CEQA CNPS: List 2.1	Coastal scrub, valley and foothill grassland	March-May
Calochortus pulchellus Mt. Diablo fairy-lantern	Fed: None State: CEQA CNPS: List 1B.2	Chaparral, cismontane woodland, valley and foothill grassland	April-June

Calochortus umbellatus Oakland star-tulip	Fed: None State: CEQA CNPS: List 4.2	Broadleaved upland forest, chaparral, conifer forest, valley and foothill grassland	March-May
Calochortus uniflorus pink star-tulip	Fed: None State: CEQA CNPS: List 4.2	Coastal prairie, coastal scrub, meadows and seeps, north coast coniferous forest	April-June
Carex comosa bristly sedge	Fed: None State: CEQA CNPS: List 2.1	Coastal prairie, marshes and swamps, valley and foothill grassland	May-Sept
Castilleja ambigua var. *ambigua* johnny-nip	Fed: None State: CEQA CNPS: List 4.2	Coastal bluff scrub, coastal prairie coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins	March-August
Castilleja rubicundula var. *rubicundula* pink creamsacs	Fed: None State: CEQA CNPS: List 1B.2	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland (serpentinite)	April-June
Centromadia parryi var. *congdonii* Congdon's tarplant	Fed: None State: CEQA CNPS: List 1B.1	Valley and foothill grassland (alkaline)	May-Oct (Nov)
Cirsium andrewsii Franciscan thistle	Fed: None State: CEQA CNPS: List 1B.2	Broadleaved upland forest, coastal bluff scrub	June-July
Convolvulus simulans small-flowered morning-glory	Fed: None State: CEQA CNPS: List 4.2	Chaparral (openings), coastal scrub, valley and foothill grassland (clay, serpentinite seeps)	March-July
Cryptantha hooveri Hoover's cryptantha	Fed: None State: CEQA CNPS: List 1A	Valley and foothill grassland (sandy)	April-May
Cyperus erythrorhizos Red-rooted cyperus	Fed: None State: CEQA CNPS: None East Bay CNPS: A2	Riparian	July-Oct
Delphinium californicum ssp. *interius* hospital canyon larkspur	Fed: None State: CEQA CNPS: List 1B.2	Cismontane woodland (mesic)	April-June
Delphinium recurvatum recurved larkspur	Fed: None State: CEQA CNPS: List 1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland (alkaline)	Mar-June

Didymodon norrisii Norris' beard moss	Fed: None State: CEQA CNPS: List 2.2	Cismontane woodland, lower montane coniferous forest	Unknown
Dirca occidentalis western leatherwood	Fed: None State: CEQA CNPS: List 1B.2	Broadleaved upland forest, conifer forest, chaparral, riparian forest, cismontane woodland	Jan-April
Eriogonum luteolum var. *caninum* Tiburon buckwheat	Fed: None State: CEQA CNPS: List 1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland, (serpentinite, sandy to gravelly)	May-Sept
Eriogonum truncatum Mt. Diablo buckwheat	Fed: None State: CEQA CNPS: List 1B.1	Chaparral, coastal scrub, valley and foothill grassland (sandy)	April-Sept (Nov-Dec)
Eriogonum umbellatum var. *bahiiforme* bay buckwheat	Fed: None State: CEQA CNPS: List 4.2	Cismontane woodland, lower montane coniferous forest (rocky, often serpentinite)	July-Sept
Eriophyllum jepsonii Jepson's woolly sunflower	Fed: None State: CEQA CNPS: List 4.3	Chaparral, cismontane woodland, coastal scrub (sometimes serpentinite)	April-June
Eryngium spinosepalum spiny-sepaled button-celery	Fed: None State: CEQA CNPS: List 1B.2	Valley and foothill grassland, vernal pools	April-June
Eschscholzia rhombipetala diamond-petaled California poppy	Fed: None State: CEQA CNPS: List 1B.1	Valley and foothill grassland (clay)	March-April
Fritillaria agrestis stinkbells	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, valley and foothill grassland (clay, sometimes serpentinite)	March-April
Fritillaria liliacea fragrant fritillary	Fed: None State: CEQA CNPS: List 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland (often serpentinite)	Feb-April
Galium andrewsii ssp. *gatense* phlox-leaf serpentine bedstraw	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, lower montane coniferous forest (serpentinite, rocky)	April-July
Gilia millefoliata Dark-eyed gilia	Fed: None State: CEQA CNPS: List 1B.2	Coastal dunes	April-July
Helianthella castanea Diablo helianthella	Fed: None State: CEQA CNPS: List 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland	April-June

Hesperevax caulescens hogwallow starfish	Fed: None State: CEQA CNPS: List 4.2	Vernal Pools	April-June
Hesperolinon breweri Brewer's western flax	Fed: None State: CEQA CNPS: List 1B.2	Chaparral, cismontane woodland, valley and foothill grassland (usually serpentinite)	May-July
Hoita strobilina Loma Prieta hoita	Fed: None State: CEQA CNPS: List 1B.1	Chaparral, cismontane woodland	May-June
Holocarpha macradenia Santa Cruz tarplant	Fed: Threatened State: Endngered CNPS: List 1B.1	Coastal prairie, valley and foothill grassland	June-Oct
Irsi longipetala coast iris	Fed: None State: CEQA CNPS: List 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps	March-May
Juglans californica var. *hindsii* Northern California black walnut	Fed: None State: CEQA CNPS: List 1B.1	Cismontane woodland, riparian forest	April-May
Lasthenia con jugens Contra Costa goldfields	Fed: Endangered State: CEQA CNPS: List 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools (mesic)	Mar-June
Lasthenia ferrisiae *Ferris' goldfields*	Fed: None State: CEQA CNPS: List 4.2	Vernal pools	Feb-May
Layia hieraciodes *tall layia*	Fed: None State: CEQA CNPS: None East Bay CNPS: A2	Miscellaneous	April-July
Leptosiphon acicularis bristly leptosiphon	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, coastal prairie	April-July
Leptosiphon ambiguus serpentine leptosiphon	Fed: None State: CEQA CNPS: List 4.2	Cismontane woodland, coastal scrub, valley and foothill grassland (usually serpentinite)	March-June
Leptosiphon grandiflorus large-flowered linanthus	Fed: None State: CEQA CNPS: List 4.2	Coastal bluff scrub, closed-cone conifer forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland	April-July
Madia radiata showy madia	Fed: None State: CEQA CNPS: List 1B.1	Cismontane woodland, valley and foothill grassland	March-May

Malacothamnus hallii Hall's bush mallow	Fed: None State: CEQA CNPS: List 1B.2	Chaparral, coastal scrub	May-Sept (Oct)
Meconella oregona Oregon meconella	Fed: None State: CEQA CNPS: List 1B.1	Cismontane woodland, valley and foothill grassland, miscellaneous habitats	March-April
Micropus amphibolus Mt. Diablo cottonweed	Fed: None State: CEQA CNPS: List 3.2	Broadleaved upland forest, cismontane woodland, valley and foothill grassland	April-May
Microseris sylvatica sylvan microseris	Fed: None State: CEQA CNPS: List 4.2	Cismontane woodland, valley and foothill grassland	March-May
Monardella antonina ssp. *antonina* San Antonio hills monardella	Fed: None State: CEQA CNPS: List 3	Chaparral, cismontane woodland	June-August
Monolopia gracilens *woodland woolythreads*	Fed: None State: CEQA CNPS: List 1B.2	Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, north Coast coniferous forest (openings), valley and foothill grassland (serpentine)	(Feb), Mar-July
Myosurus minimus ssp. *apus* little mousetail	Fed: None State: CEQA CNPS: List 3.1	Valley and foothill grassland, vernal pools (alkaline)	Mar-June
Navarretia cotulifolia cotula navarretia	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, valley and foothill grassland	May-June
Navarettia nigelliformis ssp. *nigelliformis* adobe navarettia	Fed: None State: CEQA CNPS: List 4.2	Valley and foothill grassland (vernally mesic), vernal pools (sometimes/clay, sometimes serpentinite)	April-June
Navarettia nigelliformis ssp. *radianss* shining navarettia	Fed: None State: CEQA CNPS: List 1B.2	Cismontane woodland, valley and foothill grassland, vernal pools (sometimes clay)	April-July
Pentachaeta alsinoides tiny pentachaeta	Fed: None State: CEQA CNPS: None East Bay CNPS: A2	Grassland	March-June
Perideridia gairdneri ssp. gairdneri Gairdner's yampah	Fed: None State: CEQA CNPS: List 4.2	Broadleaved upland forest, chaparral, valley and foothill grassland, vernal pools (mesic)	June-Oct

Piperia michaelii Michael's rein orchid	Fed: None State: CEQA CNPS: List 4.2	Coastal Bluff Scrub, Conifer Forest, Woodland	May-August
Plagiobothrys chorisianus var. *chorisianus* Choris's popcorn-flower	Fed: None State: Endangered CNPS: List 1B.1	Chaparral, coastal prairie, coastal scrub (mesic)	April-June
Plagiobothrys diffusus San Francisco popcorn-flower	Fed: None State: CEQA CNPS: List 4.2	Coastal prairie, valley and foothill grassland	April-June
Polygonum marinense Marin knotweed	Fed: None State: CEQA CNPS: List 3.1	Marshes and swamps	May-August
Ranunculus lobbii Lobb's aquatic buttercup	Fed: None State: CEQA CNPS: List 4.2	Cismontane woodland, north coast conifer forest, valley and foothill grassland, vernal pools (mesic)	March-May
Senecio aphanactis chaparral ragwort	Fed: None State: CEQA CNPS: List 2B.2	Chaparral, cismontane woodland, coastal scrub (sometimes alkaline)	Jan-April
Trifolium hydrophilum saline clover	Fed: None State: CEQA CNPS: List 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools	April-June
Viburnum ellipticum oval-leaved viburnum	Fed: None State: CEQA CNPS: List 2.3	Chaparral, cismontane woodland, lower montane confierous forest	May-June

Explanation of Status Terms

Federal

Endangered: Required for consideration
Threatened: Required for consideration

State

Endangered: Required for consideration
Rare: Required for consideration
CEQA: Recommended for consideration under California Environmental Quality Act

CNPS (California Native Plant Society California Rare Plant Rank

1A: Plants presumed extinct in California. Required for consideration
1B: Rare, threatened or endangered in California and elsewhere. Required for consideration
List 2: Plants rare, threatened or endangered in California, but more common elsewhere. Required for consideration

List 3: Plants needing more information – a review list. Recommended for consideration
List 4: Plants of limited distribution – a watch list. Recommended for consideration

CNPS Threat Code Extensions: .1 Seriously endangered in California
.2 Fairly endangered in California
.3 Not very endangered in California

East Bay Chapter, CNPS
A1: Plants occurring in 2 regions or less in Alameda and Contra Costa counties. Protected under CEQA
A2: Plants occurring in 3 to 5 regions here, or otherwise threatened. Protected under CEQA

Appendix B Table B.3

Special-Status Animal Species Known or Suspected to Occur in Lafayette Vicinity

Species	Status State/Federal	Preferred Habitat (Potential for occurrence on project site)
Mammals		
Pallid bat *Antrozous pallidus*	--/SSC	Roosts in caves, crevices, abandoned buildings, and forages in a variety of habitats. (Low)
Ringtail *Bassariscus astutus*	--/SP	Chaparral and foothill canyons, preferring riparian areas. (Low)
Berkeley kangaroo rat *Dipodemys hermanni berkeleyenis*	--/--	Open grassy hilltops and open areas in chaparral and woodland, with fine, deep soil for burrowing. (Low)
Mountain lion *Felis concolor*	--/SP	Forested and brush habitat, tends to avoid open areas. (Low)
Hoary bat *Lasiurus cinereus*	--/--	Roosts alone on trees, hidden in foliage, but on occasion seen in caves. (Low)
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	--/SSC	Dense woodlands, mixed forests, chaparral, and scrub. (Present)
Townsend western big-eared bat *Placates townsendi tonwsendi*	--/SSC	Roosts in caves, mines, and abandoned buildings, and forages in a variety of habitats. (Low)
American badger *Taxidea taxus*	--/SSC	Open grasslands and agricultural fields with suitable prey. (Low)
San Joaquin kit fox *Vulpes macrotis mutica*	FE/ST	Open grasslands, alkali scrub, and agricultural fields with suitable prey/retreat habitat. (None)
Birds		
White-tailed kite *Elanus leucurus*	--/SP	Open grasslands with trees and shrubs used for nesting. (Moderate)
Sharp-shinned hawk *Accipiter striatus*	--/--	Open deciduous woodlands, mixed or coniferous forests, and thickets. (Moderate)
Cooper's hawk *Accipiter cooperii*	--/--	Forests or woodlands; prefers broadleafed trees in riparian areas for nesting. (Moderate)
Tricolored blackbird *Agelaius tricolor*	--/SSC	Forms large colonies for nesting in freshwater marsh and forages in surrounding fields and grasslands. (None)
Western burrowing owl *Athene cunicularia*	--/SSC	Open grasslands, agricultural fields, drainages and other right-of ways with suitable burrows and retreat habitat for nesting. (Low)

Appendix B Table B.3 (Continued)

Special-Status Animal Species Known or Suspected to Occur in Lafayette Vicinity

Species	Status State/Federal	Preferred Habitat (Potential for occurrence on project site)
Ferruginous hawk *Buteo regalis*	--/--	Western plains and prairies. (Low)
Golden eagle *Aquila chrysaetos*	--/SSC, SP	Forages in open grasslands, nests on cliff ledges and trees in hilly areas. (Low)
Northern harrier *Circus cyaneus*	--/SSC	Marshes, fields, and grasslands. (Moderate)
Merlin *Falco columbrius*	--/--	Frequents coastlines, open grasslands, savannas, woodlands, lakes, and wetlands. (Low)
American peregrine falcon *Falco peregrinus anatum*	Delisted, SP	Riparian areas, open woodlands, coastal and inland wetlands. (Low)
Prairie falcon *Falco mexicanus*	--/--	Grasslands, savannas, rangeland, agricultural fields, and desert scrub areas. (Low)
California horned lark *Eremophila alpestris actia*	--/--	Fields and open grasslands. (Low)
Loggerhead shrike *Lanius ludovicianus*	--/SSC	Open brushy areas in grasslands with lookout perches. (Moderate)
Yellow warbler *Dendroica petechia*	--/SSC	Frequents riparian zones, woodlands, and forests with a brushy understory during breeding season. Found in a variety of sparse to dense woodland and forest habitats during migration. (Low)
Reptiles		
Northern California legless lizard *Anniella pulchra*	--/SSC	Variety of habitats, most common in lowlands with loose sandy soil and duff. (Low)
Western pond turtle *Emys marmorata*	-/SSC	Ponds, marshes, rivers, and streams with retreat pools. (None)
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/ST	Restricted to valley-foothill hardwood habitat of the Coast Range. Prefers south-facing slopes and ravines where shrubs form a vegetative mosaic of woodland and grassland with available prey. (None)
Amphibians		
California tiger salamander *Ambystoma californiense*	FT/ST, SSC	Breeds in vernal pools and stock ponds, and aestivates in ground squirrel burrows and other humid, protected locations. (None)
California red-legged frog *Rana aurora draytonii*	FT/SSC	Marshes, ponds, streams, lakes and reservoirs, prefers emergent vegetation for cover. Known to disperse and forage in adjacent uplands. (None)

Appendix B Table B.3 (Continued)

Special-Status Animal Species Known or Suspected to Occur in Lafayette Vicinity

Species	Status State/Federal	Preferred Habitat (Potential for occurrence on project site)
Foothill yellow-legged frog *Rana boylii*	--/SSC	Perennial and intermittent streams with cobble substrate and retreat pools. (None)
Fish and Invertebrates		
Obscure bumblebee *Bombus caliginosus*	--/--	Open coastal prairies and meadows, nesting underground and above ground in abandoned nests. Colonies are annual and only new mated queens overwinter. (Low)
Western bumblebee *Bombus occidentalis*	--/--	Once common in western US, has undergone severe decline. Nesting typically underground. Colonies are annual and only new mated queens overwinter. (Low)
Bridges' coastrange shoulderband snail *Helminthoglypta nickliniana bridgesii*	--/--	Typically found in moist, often riparian areas under rocks, logs, and woody debris and duff. Known only from Alameda and Contra Costa counties. (Low)
Steelhead *Oncorhynchus mykiss*	FT/SSC	Open water of Pacific Ocean, Bay, and Delta, migrates to spawn in tributary rivers and streams. (None)
Chinook salmon *Oncorhynchus tshawytsha*	FT/SSC	Open water of Pacific Ocean, Bay, and Delta, migrates to spawn in tributary rivers and streams. (None)

Status Explanations:

Federal

FE = Listed as endangered under the federal Endangered Species Act.
FT = Listed as threatened under the federal Endangered Species Act.

State

SE = Listed as endangered under the California Endangered Species Act.
ST = Listed as threatened under the California Endangered Species Act.
SP = Fully protected under CDFW Code.
SSC = Considered a California "Species of Special Concern" by CDFW.

Appendix C:
Arborist Report

September 6, 2019

James Bouquin
Cancer Support Community SF Bay Area
925-933-0107 | jbouquin@cancersupport.net

Re: Arborist Report for Cancer Support Community Center, APN: 252-050-014

Dear James,

This arborist report addresses the proposed Cancer Support Community Center project off Mt. Diablo Blvd. across from the Lafayette Community Gardens. Per the City of Lafayette's Tree Preservation Ordinance, the report includes:

- Tag and identify all "Protected" trees (trees ≥ 6" in diameter at 4.5' above grade) that are within 50' of any potential impacts, grading, trenching, staging, storage, access lanes, and all site improvements.
- Identify dripline locations and tree numbers on site plan.
- Assess individual tree health and structural condition.
- Assess proposed improvements for potential encroachment.
- Based on proposed encroachment, tree health, structure, and species susceptibility, make recommendations for preservation.

Site Summary

The proposed Cancer Support Community Center will be located on the property directly across from the Lafayette Community Garden, adjacent to the Lafayette Reservoir. Although the property is largely undeveloped, existing improvements include a sidewalk, asphalt/gravel driveway, previously graded areas (Figure 1), and a gazebo at the south end of the property. The natural terrain slopes from north to south, with a creek roughly following the west property line.

The existing landscape is native oak woodland, with many groves of oaks and bays. I included one hundred forty-four (144) trees in my tree inventory, nearly all of which are native oaks and bays. The only two exceptions include one plum and one pine tree. The age distribution is good, with many young and young-mature trees, and a handful of dead and declining trees. Several trees exceed 30" in diameter. Health & structure is variable, as expected where trees are growing together and competing for available resources. Tree conditions are in alignment with

Figure 1. One of the graded areas of property (at south) will be used for a garden area.

what is expected of an unmanaged woodland.

The proposed project will: expand sidewalks; install storm drains & bio-retention basins; construct new a driveway, building, playground, parking lots, trail, boardwalks, garden, and amphitheatre. Additional boardwalks and platforms will be constructed at a later phase. Although these improvements were designed to minimize impacts on trees, a relatively low number of trees will need to be removed. Overall tree cover will not be significantly affected, and screening between properties will be maintained by the remaining trees, in addition to others not included in the arborist report.

It is my opinion that a total of fourteen (14) trees will need to be removed to accommodate the proposed project. If actual root encroachment during construction is high, an additional five trees may need to be removed. The remaining one hundred and twenty-five (125) trees can be retained given that the protection measures within this report are followed.

Figure 2. Oaks #91 (horizontal trunk in center of photo) and #92 (far right) are recommended for removal due to poor condition. Both trees lean over the proposed amphitheatre.

Assumptions & Limitations

This report is based on my site visit on 7/22/19 and the following plans:

- Tree survey by Carlson, Barbee & Gibson, Inc, dated 6/24/19
- Proposed grading & utility study by CBG, dated 9/2/19
- Proposed landscape site plan by Gates+Associates, file name dated 8/26/19 (appears to show additional surveyed trees that were missing from CBG survey)

It was assumed that the proposed improvements and trees were accurately surveyed. The health and structure of the trees were assessed visually from ground level. No drilling, root excavation, or aerial inspections were performed. Internal or non-detectable defects may exist and could lead to part or whole tree failures. Due to the dynamic nature of trees and their environment, it is not possible for arborists to guarantee that trees will not fail in the future.

Discussion

Overall, the proposed improvements are impressively clear of trees. Significant redesign efforts were made to reduce encroachment, but the scattered distribution of the existing trees makes complete avoidance impossible. Fourteen trees are recommended for removal as they are likely to fail or decline due to construction impacts.

An additional five trees are also subject to high encroachment, but their preservation is worthwhile – thus, I recommend waiting on the tree removal decision. Tree root systems are often difficult to predict without excavating trenches to locate roots, especially if there has been some development in the area (Figure 3). There is a possibility that the five trees may not have significant roots within the proposed areas of grading or excavation, or that the required root

loss can be tolerated by the trees. Therefore, recommending their removals would be premature. I recommend having an arborist on-site during grading and/or excavation near these trees, to ensure that roots are not needlessly damaged, to provide recommendations as needed, and to determine whether removal is required. The arborist can also properly prune large roots with a handsaw or sawzall to minimize desiccation and death of roots.

The proposed boardwalks south of the building will be constructed at a future time. I recommend protection fencing (or mulch) and hand excavation of footings close to large trees. Careful excavation by hand minimizes damage to roots & allows for minor adjustments to save larger roots.

Recommendations (to be printed on site plans)

Design Phase

- Adjust proposed boardwalk platform to accommodate trees #24 & 51.
- Adjust location of proposed walkway as far from tree #93 as possible.
- Eliminate proposed trail grading south of the existing access road by trees #56 & 57.
- Explore options for avoiding excavation into existing grade during proposed fill by tree #19 & 20; minimize over-excavation outside building by tree #20.

Pre-construction Phase

- Remove trees #10, 11, 17, 18, 81, 86, 91, 92, 122, 125, 126, 136-138 (14 trees).
- Mulch from tree removals shall be spread out under the driplines of trees that will be retained, keeping at least 12” away from the trunks.
- Prior to construction or grading, contractor shall install fencing to construct a temporary Tree Protection Zone (TPZ) around each tree or grove of trees as indicated on the tree protection plan. Consult project arborist (PA) if additional staging or access areas are needed. NOTE: The City of Lafayette only accepts two types of tree protection fencing – (1) 6’ chain-link or (2) orange poly fencing framed by 2x4s. See attached diagram; fencing locations are not yet provided for the proposed future boardwalk construction.
- TPZ fencing shall remain in an upright sturdy manner from the start of grading until the completion of construction. Fencing shall not be adjusted or removed without consulting the PA.

Figure 3. Tree #124 is located very close to the proposed driveway and may be subject to high root loss from grading. If root loss during construction is excessive, it may need to be removed.

Foundation, Grading, and Construction Phase

- Note: Trees #19, 20, 93, 121 & 124 may also need to be removed if encroachment during construction is high.
- Project arborist (PA) shall be on-site during excavation for sidewalk by tree #1, drainage improvements by tree #2, and retaining wall excavation by tree #16.
- PA shall be on site during grading within dripline of tree #19, 20, 93, 121, 124 & 129.
- Consult PA if roots $\geq$ 2” diameter are encountered during grading or excavation by trees #63, 84, 85, 105, 108, 109 & 117. If appropriate, cleanly prune roots $\geq$ 2” in diameter,

immediately cover, and keep moist till backfilled. Trees subjected to significant root pruning may require supplemental irrigation during construction during warmer weather.

- If needed, pruning shall be performed by personnel certified by the International Society of Arboriculture (ISA). All pruning shall adhere to ISA and American National Standards Institute (ANSI) Standards and Best Management Practices.
- Should TPZ encroachment be necessary, the contractor shall contact the PA for consultation and recommendations.
- Contractor shall keep TPZs free of all construction-related materials, debris, fill soil, equipment, etc. The only acceptable material is mulch spread out beneath the trees.
- Should any damage to the trees occur, the contractor shall promptly notify the PA to appropriately mitigate the damage.

Landscaping Phase

- Contractor shall avoid trenching and grade changes within oak driplines.
- All planting and irrigation shall be kept a minimum of 10' away from native oaks. All irrigation within the driplines shall be targeted at specific plants, such as drip emitters or bubblers. No overhead irrigation shall occur within the driplines of native oaks.
- All planting within oak driplines shall be compatible with oaks, consisting of plant material that requires little to no water after two years' establishment. A list of oak-compatible plants can be found in a publication from the California Oak Foundation, available at: http://californiaoaks.org/wp-content/uploads/2016/04/CompatiblePlantsUnderAroundOaks.pdf

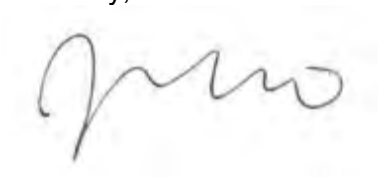
Boardwalk Construction

- Consult the project arborist (PA) for new or adjusted fencing locations.
- Proposed footings within 15' of trees #1, 16, 19, 23, 54, 55, 63 shall be dug by hand for the top 3' of soil. If large roots ≥ 2" diameter are encountered during excavation, consult the PA for recommendations. Footing location may need to be adjusted to save large roots.
- If appropriate, cleanly prune roots ≥ 2" in diameter, immediately cover, and keep moist till backfilled.

Thank you for the opportunity to provide this report, and please do not hesitate to contact me if there are any questions or concerns.

Please see attached tree inventory plan & tree inventory table.

Sincerely,



Jennifer Tso
Certified Arborist #WE-10270A
Tree Risk Assessor Qualified

Tree Inventory & Assessment Table

#s: Each tree was given a numerical square tag from #1-144. (Older oblong tags are found on some trees & were recorded where encountered.) Their locations are given in the tree protection plan.

DBH (Diameter at Breast Height): Trunk diameters in inches were calculated from the circumference measured at 4.5' above average grade.

Health & Structural Condition Rating

Dead: Dead or declining past chance of recovery.

Poor (P): Stunted or declining canopy, poor foliar color, possible disease or insect issues. Severe structural defects that may or may not be correctable. Usually not a reliable specimen for preservation.

Fair (F): Fair to moderate vigor. Minor structural defects that can be corrected. More susceptible to construction impacts than a tree in good condition.

Good (G): Good vigor and color, with no obvious problems or defects. Generally more resilient to impacts.

Very Good (VG): Exceptional specimen with excellent vigor and structure. Unusually nice.

Age

Young (Y): Within the first 20% of expected life span. High resiliency to encroachment.

Mature (M): Between 20% - 80% of expected life span. Moderate resiliency to encroachment.

Overmature (OM): In >80% of expected life span. Low resiliency to encroachment.

DE: Dripline Encroachment (X indicates encroachment)

CI: Anticipated Construction Impact (L = Low, M = Moderate, H = High)

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
1	Coast live oak (*Quercus agrifolia*)	30	G-F	F	20	20	20	20	M	X	M	Oblong tag #92. 6' from existing sidewalk and 10' from gravel driveway. Co-dominant stems at 6' with crowded scaffolds, some fused. Moderate sycamore borer. Proposed sidewalk 4' to NE & 10' to N/E, expands existing sidewalk. Proposed boardwalk 13' to W.	Install fencing. Arborist on site during excavation for sidewalk. Hand dig top 3' of footings within 15' of trunk.
2	Valley oak (*Quercus lobata*)	18	G	F	20	20	20	20	M	X	M-H	DBH estimated due to poison oak. Trunk buried. Multiple trunk cankers on north side. Proposed SD 9' to NE, proposed parking 16' to SW, proposed bioretention 19' to N.	Install fencing. Arborist on site during drainage excavation.
3	Coast live oak	32	G	F	25	25	25	25	M	X	L-M	Moderate sycamore borer damage. Trunk flare slightly buried. Multiple co-dominant stems at 4' with minor bark inclusion. Proposed boardwalk 21' to NE, parking >30' to E, limit of grading 15' to SW (minor fill).	Install fencing.
4	Valley oak	9	F	F	5	5	5	5	M		L	DBH estimated due to poison oak. Co-dominant stems at 4.5'. Proposed boardwalk 25' to S, proposed retaining wall 11' to N.	Install fencing.
5	Coast live oak	8	G	G	5	5	5	5	Y		L	DBH estimated due to dense brush. Proposed boardwalk 24' to S, proposed retaining wall 12' to N.	Install fencing.
6	Coast live oak	24	G	G	20	20	20	20	M	X	L	Minimal trunk flare. Dominated by poison oak. 16' from proposed boardwalk.	Install fencing.

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
7	Coast live oak	13	G	F	20S				M	X	L	Phototropic lean to S. Sparse canopy, completely understory. 17' from proposed boardwalk.	Install fencing.
8	Coast live oak	14	G	G-F	8	20	20	0	M		L	Minor phototropic lean. 28' from proposed boardwalk.	Install fencing.
9	Coast live oak	20, 15	F	F	0	30	18	0	M		L	Dominated by poison oak. Co-dominant stems with included bark. Upper scaffolds arched. 20' from proposed boardwalk.	Install fencing.
10	Valley oak	10	VP	P	10	0	0	0	OM	X	H	Poison oak climbing trunk. Stunted minimal growth along trunk (canopy consists only of sprouts). In proposed playground.	Remove.
11	Valley oak	32	F-P	F-P	40	40	40	40	OM	X	H	DBH estimated due to poison oak. Elongated scaffolds; all canopy in upper half. Sparse with stunted growth. In proposed playground.	Remove.
12	Coast live oak	17.5	G-F	G-F	0	20	20	0	M	X	L	Asymmetrical canopy due to grove. Proposed stormwater basin grading 14' to N, boardwalks 18' & 14' to E & S.	Install fencing.
13	Coast live oak	13	G	F	30	20	0	0	M	X	L	Torsion in trunk. Slightly sparse canopy. Proposed stormwater basin grading 10' to N.	Install fencing.
14	Coast live oak	18	G-F	G-F	20	0	25	10	M	X	L	Corrected phototropic lean of lower trunk. Slightly sparse canopy. Proposed stormwater basin grading 13' N, proposed boardwalk 15' to S.	Install fencing.
15	Coast live oak	20	G	G-F	25	0	0	25	M	X	L	Proposed stormwater basin grading 17' N, boardwalk 25' to SE, patio 24' to SW.	Install fencing.
16	Coast live oak	24	G	G-F	0	0	20	20	M	X	H	Phototropic lean. Proposed patio & retaining wall 11' to NE.	Install fencing. Arborist on site during excavation for retaining wall. Hand dig top 3' of footings within 15' of trunk.
17	Valley oak	20	F	F	20	20	20	20	M	X	H	DBH estimated due to poison oak. Slightly sparse canopy. Past branch failures. In proposed building.	Remove.
18	California black oak (*Quercus kelloggii*)	18	F	F	25	25	25	25	M	X	H	Sparse interior with moderate dieback. 5' from proposed drainage, 8' from proposed house. In proposed grading.	Remove.
19	Valley oak	22	G	F-P	0	10	18	18	M	X	H	Sparse one-sided canopy. Mostly epicormic sprouting from wood. Proposed building 13' & limit of fill 1' to NE, proposed 2:1 grading 13' to E, proposed boardwalk 10' to SW.	Install fencing. Avoid cuts in proposed fill. Arborist on site during grading within dripline. Hand dig top 3' of footings within 15' of trunk. Tree may need to be removed if encroachment is high.

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
20	Valley oak	34	F	F	40	40	40	40	M	X	H	Abundant sprouting from wood. Proposed building 14' to NE with ~7' cut; trunk in proposed fill area.	Minimize over-excavation and grading as much as possible; avoid cuts in proposed fill area. Install fencing. Arborist on site during grading within dripline; grading shall be done by hand if feasible. Tree may need to be removed if encroachment is high.
21	Valley oak	15	F	G-F	15	15	15	15	M		L	Slightly sparse canopy. Proposed V-ditch 18' to N, boardwalk 25' to W.	None.
22	Valley oak	22	G-F	F	18	18	18	18	M		L	DBH estimated due to poison oak. Co-dominant stems at 8'. Future boardwalk > 30' from tree.	None.
23	Valley oak	24	G-F	F	25	25	25	25	M	X	L-M	Sprouting from trunk and large scaffolds. Black exudate dripping from S scaffold. Surrounded by proposed future boardwalk.	Install fencing. Hand dig top 3' of footings within 15' of trunk.
24	Valley oak	6	F	F-P	4	4	4	4	Y	X	H	Not surveyed. Top broke. Dominated by poison oak. In proposed future boardwalk platform.	Adjust platform design to save tree. Install fencing.
25	California black oak	22.5	VP	VP	8W				OM		L	Trunk failed at 6'; remaining canopy consists of one healthy epicormic sprout. Severe decay with fungal bodies throughout entire trunk; beetle frass. Clear of construction.	None; retain as habitat.
26	California black oak	27	F-P	VP	10	10	10	10	M		L	Trunks and stems completely decayed. Tops failed, canopy mostly small diameter sprouts. Clear of construction.	None.
27	California black oak	15	F	F	20	15	0	20	M		L	Lean to east. Clear of construction.	None.
28	California bay	9	G	G	8	8	8	8	Y		L	Clear of construction.	None.
29	Valley oak	9	G-F	G	6	6	6	6	Y		L	DBH estimated due to poison oak. Narrow canopy. Proposed future boardwalk 17' to W.	None.
30	Valley oak	38	F-P	P	0	0	30	10	OM		L	Large dead scaffolds have failed to other directions. Clear of construction.	None.
31	California black oak	14	F	P	12S				M		L	Top broken. Clear of construction.	None.
32	California black oak	14	F	F-P	15	0	15	0	M		L	Clear of construction.	None.
33	California black oak	18	F	P	3	3	3	3	M		L	Top broke off; canopy consists of sprouts. Clear of construction.	None.

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
34	Valley oak	6	F	F-P	15S				Y		L	Phototropic lean. Clear of construction.	None.
35	California black oak	10	F	F-P	20S				M		L	Trunks turn downwards to ground. Clear of construction.	None.
36	Valley oak	11	F	F-P	30S				M		L	Phototropic lean to S. Clear of construction.	None.
37	Coast live oak	7	F-P	G	8	8	8	8	Y		L	Sparse canopy. Clear of construction.	None.
38	Valley oak	8	F	F	6	6	6	6	M		L	Trunk sprouting. Clear of construction.	None.
39	California black oak	15	F	F	0	0	20	20	M		L	Clear of construction.	None.
40	Valley oak	11	F	F	10E				M		L	Elongated upper trunk with minimal foliage along length. Proposed future boardwalk 9' to N.	Install fencing.
41	Valley oak	16	F	F	20N				M	X	L	DBH estimated due to poison oak. Phototropic lean to N. Proposed future boardwalk 7' to N.	Install fencing.
42	California black oak	16	F	F	15	15	15	15	M	X	L	DBH estimated due to poison oak. Sparse canopy. Proposed future boardwalk 12' to N.	Install fencing.
43	Valley oak	12	F-P	F-P	15	15	15	15	M		L	Growing through adjacent tree canopy. Single stem, swoops at top. Proposed future boardwalk 23' to N.	None.
44	Coast live oak	9	G	G	8	8	8	8	Y		L	Clear of construction.	None.
45	Coast live oak	8	F	F	8N				Y		L	Foliage only at very top of trunk. Clear of construction.	None.
46	Valley oak	9	G	F	12N				M		L	Lean to N. All foliage at top. Proposed future boardwalk 19' to N.	None.
47	Valley oak	11	G-F	F	18N				M		L	Moderate dieback. Lean to N. Clear of construction.	None.
48	California black oak	18	P	P	6	6	6	6	M		L	Top dead; minimal remaining canopy. Clear of construction.	None.
49	California black oak	17	F	F	20	20	20	20	M		L	Oblong tag #72. Clear of construction.	None.
50	Valley oak	13	F-P	F	8	8	8	8	M		L	Previous limb failures. Canopy consists of trunk sprouts. Clear of construction.	None.
51	Valley oak	12	G	F	0	0	10	10	M	X	H	Not surveyed. DBH estimated due to poison oak. In proposed platform.	Adjust platform design to save tree. Install fencing.
52	Valley oak	14	G	G-F	20	20	20	20	M	X	L	Dominated by poison oak. Proposed future boardwalk 17' to N.	None.

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
53	Valley oak	12	G	G	15	15	15	15	M	X	L	DBH estimated due to poison oak. Proposed future boardwalk 5' to S.	Install fencing.
54	Valley oak	7, 20	G	F	12	15	15	0	M	X	L	Minor phototropic lean. Enclosed by proposed future boardwalk.	Install fencing. Hand dig top 3' of footings within 15' of trunk.
55	Valley oak	25	G-F	G-F	10	10	35	0	M	X	L	Enclosed by proposed future boardwalk.	Install fencing. Hand dig top 3' of footings within 15' of trunk.
56	Valley oak	36	G	G-F	35	35	35	35	M	X	M-H	27' from proposed trail, proposed grading up to trunk.	Install fencing. Eliminate grading S of existing access road.
57	Valley oak	24	G	F	30	30	0	0	M	X	M-H	DBH estimated due to poison oak. 25' from proposed trail, proposed grading up to trunk.	Install fencing. Eliminate grading S of existing access road.
58	Valley oak	14	F	F	12S				M		L	Top died/failed. Proposed future boardwalk 5' to N.	Install fencing.
59	Valley oak	15	F	F	0	20	15	15	M		L	DBH estimated due to poison oak. Proposed future boardwalk 20' to S.	None.
60	Valley oak	16	F-P	F	10	10	10	10	M		L	DBH estimated due to poison oak. Sprouting along trunk. Proposed future boardwalk 21' to S.	None.
61	Valley oak	9	G	G	8	8	8	8	Y		L	Clear of construction.	None.
62	Valley oak	15	P	F-P	0	0	15	0	M		L	DBH estimated due to poison oak. Multiple trunk cankers on NW side. Sprouting from wood. Poison oak climbing into canopy. Proposed limit of grading for trail 17' to N.	Install fencing.
63	Valley oak	31	F	F	30	30	30	30	M	X	M	Oblong tag #88. Minor dieback. 10' from proposed grading, proposed trail 14' to N (beyond existing road); future boardwalk 8' to SW.	Install fencing. Consult arborist if roots 2" are encountered during grading. Hand dig top 3' of footings within 15' of trunk.
64	Valley oak	7, 7	G-F	F	8	8	8	8	M	X	L	Co-dominant stems. Base of trunks swollen due to multiple cankers. Proposed future boardwalk 8' to N.	Install fencing.
65	Valley oak	14	F	F	8	8	0	0	M		L	DBH estimated due to poison oak. Clear of construction.	None.
66	Valley oak	14	G	G-F	0	0	10	20	M		L	DBH estimated due to poison oak. Proposed future boardwalk 18' to S.	None.
67	Valley oak	12	G	G	8	8	8	8	M		L	DBH estimated due to poison oak. Proposed future boardwalk 20' to S.	None.

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
68	Coast live oak	20	F	G-F	20	20	6	25	M	X	L	Oblong tag #82. Lower trunk canker next to road with decay. Cankering up to 10' above grade, potential sunburn. Proposed future boardwalk 18' downlope to N.	None.
69	Valley oak	12	G	G-F	0	15	10	0	M		L	DBH estimated due to poison oak. Proposed future boardwalk 13' downslope to N.	None.
70	Valley oak	30	G	G	20	20	20	20	M		L	DBH estimated due to poison oak. Clear of construction.	None.
71	Valley oak	12	F	F	6	6	6	6	M		L	DBH estimated due to poison oak. All canopy in upper 1/4 (epicormic sprouts from broken top). Clear of construction.	None.
72	California black oak	17	G	F	10	10	10	10	M		L	DBH estimated due to poison oak. Co-dominant stems at 8'. Top broke off; healthy sprouts. Clear of construction.	None.
73	Valley oak	9	F	F-P	18N				Y		L	Lower trunk sprouts. All canopy at top. Clear of construction.	None.
74	California black oak	18	G-F	G-F	20	0	0	20	M	X	L	DBH estimated due to poison oak. 17' upslope of proposed seating.	None.
75	Coast live oak	18	G	G-F	18	18	18	18	M		L	DBH estimated due to poison oak. Co-dominant stems at 5' with bark inclusion. Clear of construction.	None.
76	Valley oak	18	G-F	G	20	20	20	20	M		L	Clear of construction.	None.
77	Valley oak	12	P	F-P	10E				M		L	Very sparse canopy; minimal foliage. Clear of construction.	None.
78	California black oak	23.5	G	G	25	20	20	20	M	X	L	Proposed path 18' to NE; garden 28' to W.	Install fencing.
79	Valley oak	11	F	F	0	6	10	8	Y		L	Somewhat understory tree. Proposed garden area 10' to W.	Install fencing.
80	California black oak	20	F	F	15	15	15	15	M		L	DBH estimated due to poison oak. 23' upslope of proposed retaining wall.	None.
81	Pine (*Pinus* sp.)	8	G	G	6	6	6	6	Y	X	H	Not surveyed. Likely Italian stone pine. In proposed retaining wall above garden area.	Remove.
82	Coast live oak	18	G-F	G-F	15	15	15	15	M		L	DBH estimated due to poison oak. 5" poison oak trunk climbing into canopy. Clear of construction.	None.
83	Valley oak	14	F-P	F	0	0	15	15	M		L	DBH estimated due to poison oak. Dominated by vine; sparse canopy. Clear of construction.	None.
84	California black oak	23.5	G	F-P	15	15	15	15	M	X	M-H	Oblong tag #132. Top blew out; resulting healthy sprouts. Proposed retaining wall 10' to E, 15' to N.	Install fencing. Consult arborist if roots $\geq$ 2" are encountered during excavation.

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
85	Coast live oak	13, 16	G	F	25	10	15	15	M	X	L	Co-dominant trunks with poor attachment (included bark). Elongated scaffold to N. Proposed retaining wall 16' to N.	Install fencing. Consult arborist if roots ≥ 2" are encountered during excavation.
86	California black oak	21	F	F	0	0	12	20	M	X	H	Oblong tag #131. E side of trunk with 2.5' long canker; good wound closure. Proposed retaining wall 6' to N.	Remove.
87	Valley oak	8	F	F	18N				Y		L	Minor canopy. Trunk not tapered. 20' from proposed retaining wall.	None.
88	Valley oak	14	G-F	G-F	15	15	15	15	M		L	Co-dominant stems at 12'. All canopy above 20'. Clear of cosntruction.	None.
89	Valley oak	11	F	F	10	0	6	10	M		L	DBH estimated due to poison oak. Larger stem topped. Proposed retaining wall 10' to E.	Install fencing.
90	Valley oak	9	F	F	15N				Y		L	DBH estimated due to poison oak. Larger stem topped. Proposed retaining wall 12' to E.	Install fencing.
91	California black oak	12	G	F-P	30N				M	X	M-H	DBH estimated due to poison oak. Upper trunk horizontal; leaning towards leveled area. 5' from proposed amphitheater.	Remove.
92	Valley oak	8	P	F-P	10N				Y	X	M-H	DBH estimated due to poison oak. Canopy very sparse. 5' from proposed amphitheatre. Can save but may continue decline.	Remove.
93	Valley oak	20	G	G	20	20	20	20	M	X	H	4' from proposed amphitheatre, 3' from proposed walkway.	Adjust walkway further from tree. Install fencing. Arborist on site during grading. May need to be removed if encroachment is high.
94	Valley oak	16	F	F	0	0	18	18	M	X	L	Trunk flare buried with slight reverse taper & different bark texture. 14' from proposed ampitheatre.	Install fencing.
95	Valley oak	8	G-F	F	15W				Y		L	Phototropic lean; upper trunk grows downward. Slightly below top of slope. Clear of construction.	None.
96	Valley oak	12	G-F	F	0	0	0	20	M		L	DBH estimated due to poison oak. At top of slope. All canopy in upper half of tree, swooping lean to W. Clear of construction.	None.
97	Valley oak	9.5	G	F	0	12	5	0	Y		L	Top of trunk curves back down. 15' from proposed path.	Install fencing.
98	Valley oak	16.5	F	F	12	12	12	12	M		L	Trunk flare buried. Sparse canopy. 19' from proposed path.	Install fencing.
99	Coast live oak	23	G	G	25	25	25	25	M		L	Several feet below creek bank. Clear of construction.	None.
100	Coast live oak	18	G	F	20	20	0	0	M		L	DBH estimated due to poison oak. Upper canopy leans to E. Slightly sparse with minor dieback. Clear of construction.	None.

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
101	Coast live oak	10	F	F	15N				M		L	Trunk failed, original leader died. Clear of construction.	None.
102	Valley oak	18.5	G-F	G-F	25	25	25	25	M	X	L	Below top of bank. 20' from proposed path.	None.
103	Coast live oak	11	G	G	10	10	0	0	Y		L	23' from proposed path.	None.
104	Coast live oak	13	F	F	0	15	15	8	M		L	Slightly sparse. 16' from proposed path.	None.
105	Valley oak	20	G	G	5	20	20	8	M	X	M	DBH estimated due to poison oak. Smaller stem dead. 10' from proposed path; 13' from proposed deck.	Install fencing. Consult arborist if roots ≥ 2" are encountered during grading.
106	Valley oak	18	F	F	0	0	15	15	M		L	DBH estimated due to poison oak; climbs 20' into canopy. Proposed path 19' to S.	Install fencing.
107	Valley oak	18	F	F	20	20	20	20	M		L	DBH estimated due to poison oak. Co-dominant stems at 8'. Proposed walkway 27' to N & 29' to S.	Install fencing.
108	Valley oak	24	F	F	30N				M		L	DBH estimated due to poison oak. . Large poison oak stem on trunk to 15' above grade. Proposed path 12' to S.	Consult arborist if roots ≥ 2" are encountered during grading.
109	Valley oak	41	G-F	G-F	25	25	25	25	M	X	M	Oblong tag #87. Trunk cankers all around trunk, mostly closed except base on N side. Interior canopy sparse with recovering sprouts. Large diameter deadwood. Proposed path 22' to N.	Install fencing. Consult arborist if roots ≥ 2" are encountered during grading.
110	Valley oak	16	G-F	G	15	15	15	0	M		L	DBH estimated due to poison oak. Trunk cankers closed. Minor lean to E. Path improvements 30' to N.	None.
111	Valley oak	16	F-P	F	10	10	10	10	M		L	DBH estimated due to poison oak. Second trunk removed, decay in stump. Sparse canopy with significant twig dieback. Clear of construction.	None.
112	Valley oak	12, 12, 10	G	F	15	15	15	15	M		L	DBH estimated due to poison oak. Multiple stems at 2.5'; one failure. 20' from proposed path.	None.
113	Valley oak	16	G	F	15	15	15	15	M		L	DBH estimated due to poison oak. Clear of construction.	None.
114	Coast live oak	27	G	G	20	20	20	20	M		L	Co-dominant stems at 5' with wide attachment. Trunk flare buried. Minor sycamore borer damage. Clear of construction, protected by low canopy.	None.
115	California black oak	18	F	G	20	20	10	20	M		L	DBH estimated due to poison oak. Canopy sparse with small twig dieback. Clear of construction.	None.
116	Coast live oak	16	F	G	15	15	15	15	M		L	Canopy slightly sparse. Clear of construction.	None.

#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
117	Coast live oak	11.5, 17	F	F	15	15	15	15	M		L	DBH estimated due to vine diameter. Canopy sparse but new shoots healthy; will recover. Was dominated by poison oak vine that has died. 17' from proposed limit of grading.	Install fencing. Consult arborist if roots ≥ 2" are encountered during grading.
118	Valley oak	11	P	F-P	10	0	10	0	M		L	Very sparse canopy with weak sprouts. Clear of construction.	None.
119	California bay	11, 9	G	G	15	15	15	15	M		L	Clear of construction.	None.
120	Coast live oak	15	G	F	20	20	0	0	M		L	Clear of construction.	None.
121	Valley oak	18	G-F	G-F	20	20	20	20	M	X	H	3 co-dominant stems at 5' above grade. Sprouting from scaffolds. 6' from proposed limit of grading; 9' from proposed driveway.	Install fencing. Arborist on-site during grading within dripline. Tree may need to be removed if encroachment is high.
122	Coast live oak	7	G	G	7	7	7	7	Y	X	H	Within 1' of proposed driveway.	Remove.
123	Plum (*Prunus* sp.)	6, 3, 3, 3, 3, 3, smaller	F	F-P	10	10	10	10	M		L	Major trunk sprouts. 12' from proposed limit of grading for driveway; below creek bank.	Install fencing.
124	Valley oak	22	G	G	20	20	20	20	M	X	H	7' from limit of grading for proposed driveway; 12' from proposed driveway; proposed SD 13' to N.	Install fencing. Arborist on-site during grading within dripline. Tree may need to be removed if encroachment is high.
125	Valley oak	6, 8	F	F	12	0	12	8	Y	X	H	Co-dominant stems at 1'. In proposed driveway.	Remove.
126	Valley oak	18	G	F	18	18	18	18	M	X	H	Slightly sparse canopy; sprouting along trunk. In proposed driveway.	Remove.
127	California black oak	13	F	F	20N				M		L	Phototropic lean to N. Clear of construction.	Install fencing.
128	Coast live oak	16, 13, 11	G-F	F	25	25	25	25	M	X	L	DBH estimated due to poison oak. Slightly sparse canopy. Co-dominant trunks. Clear of construction.	Install fencing.
129	Valley oak	30	F	F	20	25	0	10	M	X	M-H	DBH estimated due to poison oak. 10' from proposed playground.	Install fencing. Arborist on-site during grading within dripline.
130	Valley oak	7	G-F	F	10	0	0	10	Y		L	DBH estimated due to poison oak. 26' from proposed grading.	Install fencing.
131	Valley oak	10	F	F	8	0	0	6	Y		L	Narrow canopy. 18' from proposed grading.	Install fencing.
132	California black oak	14	F-P	G-F	20	15	0	0	M		L	Minor lean to N. Sparse canopy. 35' from proposed grading.	Install fencing.

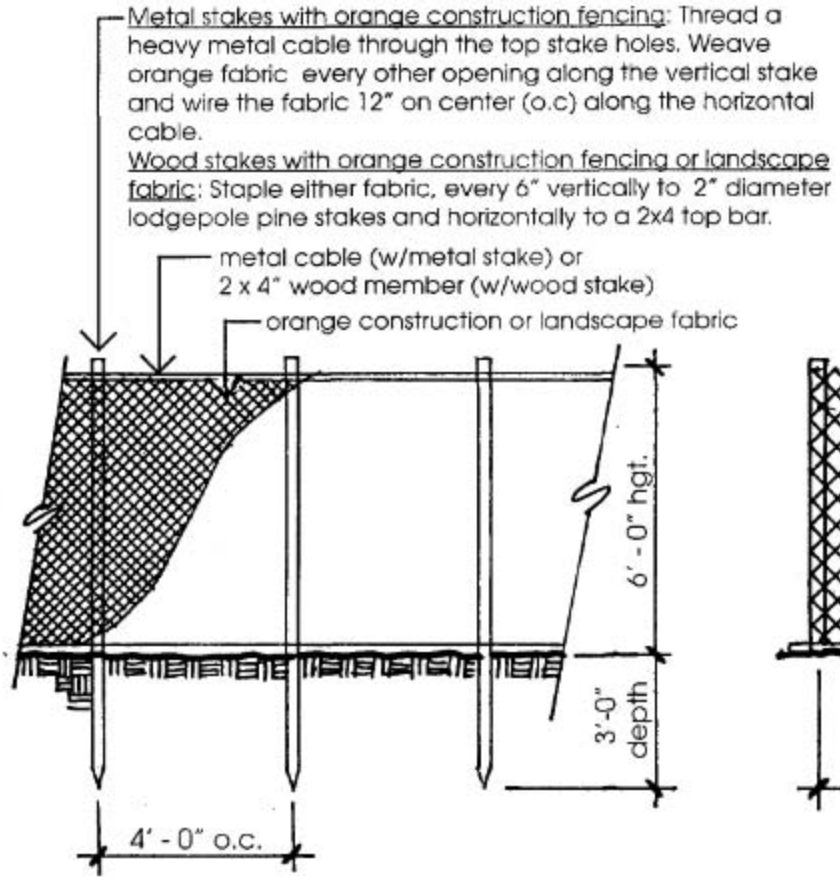
#	Species	DBH	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Action
133	California bay	8, 11	G	G	15	15	5	5	M		L	Co-dominant stems at 5' good attachment. 25' from proposed grading.	Install fencing.
134	Coast live oak	10	F	F	6	6	6	6	M		L	Very narrow canopy only above other tree canopies. 9' from proposed grading.	Install fencing.
135	California bay	11	G	G	8	8	8	8	M		L	10' from proposed grading; 15' from proposed V ditch.	Install fencing.
136	California bay	9	G	G	8	8	8	8	Y	X	H	Co-dominant stems at 10'. In proposed grading.	Remove.
137	Valley oak	14.5	F	F	20	8	0	0	M	X	H	Sparse canopy; epicormic sprouting from trunk. In proposed grading.	Remove.
138	Valley oak	12	G-F	F	15	0	0	15	M	X	H	Lean to NW. In proposed grading.	Remove.
139	Coast live oak	9	F	F	6	6	6	6	Y		L	Understory tree. Proposed V ditch 8' to N.	Install fencing.
140	California bay	7, 9, 6, 9, 4	G	F	15	15	15	15	M		L	Multiple trunks. Proposed V ditch 18' to N.	Install fencing.
141	California bay	6	G	F	12E				Y		L	Phototropic lean to NE. Clear of construction.	None.
142	California bay	10, 9	G	F	8	8	8	8	M		L	Co-dominant stems at 3.5' with narrow attachment and included bark. Clear of construction.	None.
143	California black oak	16.5	F	F	0	20	0	0	M		L	Trunk leaning to E. Clear of construction.	None.
144	Valley oak	20	F	F	15	15	15	15	M		L	Clear of construction.	None.

Trees that will need to be removed: 10, 11, 17, 18, 81, 86, 91, 92, 122, 125, 126, 136-138 (14 trees)

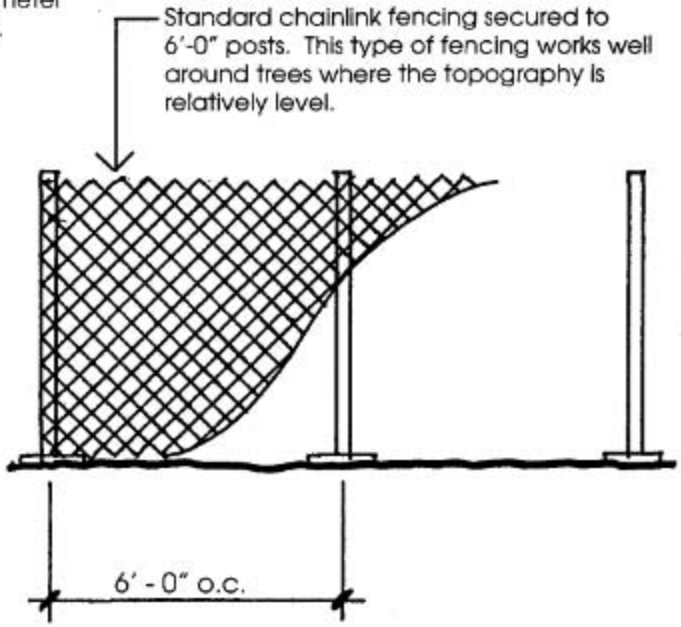
Trees that may need to be removed if encroachment is high during construction: 19, 20, 93, 121, 124 (5 trees)

Trees to be saved that will be subjected to dripline encroachment: 1-3, 6, 7, 12-16, 23, 24, 41, 42, 51-57, 63, 64, 68, 74, 78, 84, 85, 94, 102, 105, 109, 128, 129 (34 trees)

Trees to be saved that will not be encroached: 4, 5, 8, 9, 21, 22, 25-40, 43-50, 58-62, 65-67, 69-73, 75-77, 79, 80, 82, 83, 97-90, 95-101, 103, 104, 106-108, 110-120, 123, 127, 130-135, 139-144 (91 trees)



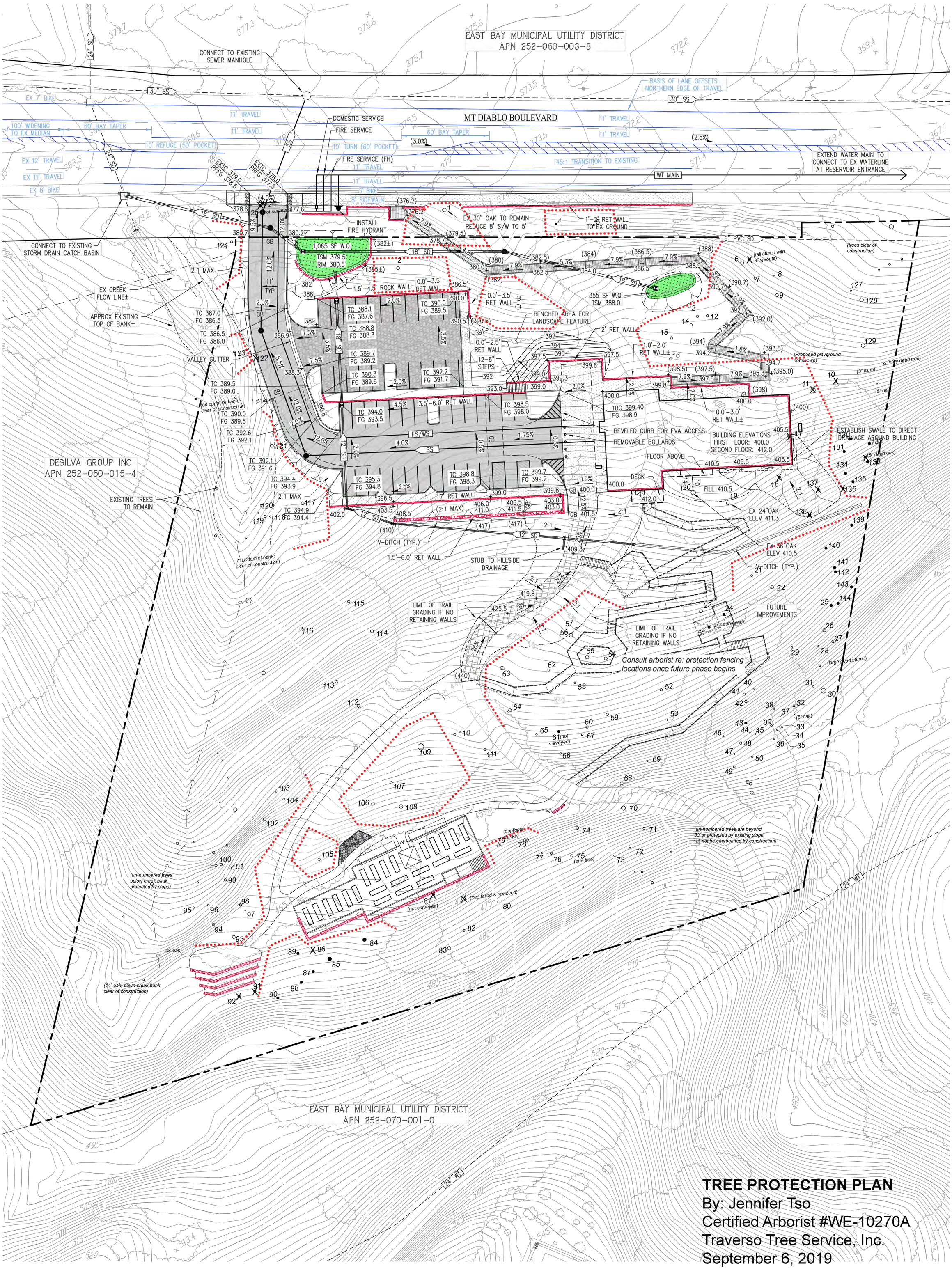
Post and Fabric Fence Options



Chain Link Fence

Tree Protection Fence Options

1/4" = 1'-0"



TREE PROTECTION PLAN
By: Jennifer Tso
Certified Arborist #WE-10270A
Traverso Tree Service, Inc.
September 6, 2019
(drawn on proposed grading plan)

LEGEND

- BOUNDARY LINE
- ADJACENT PARCEL BOUNDARY
- EXISTING FENCE
- EXISTING IMPROVEMENTS
- 24" WT — EXISTING WATER PIPE
- 15" SS — EXISTING SANITARY SEWER
- 24" SD — EXISTING STORM DRAIN
- STORM WATER QUALITY BASIN
- PROPOSED PAVEMENT
- PROPOSED GRAVEL (PARKING AREA & TURNOUT)
- TREE PROTECTION FENCING (added by arborist)

CANCER SUPPORT COMMUNITY
GRADING & UTILITY STUDY

CITY OF LAFAYETTE CONTRA COSTA COUNTY CALIFORNIA

0' 30' 90' 120'

SCALE: 1" = 30' DATE: SEPTEMBER 2, 2019

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Appendix D:
Geotechnical Investigation

Appendix E:
Noise

Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.

- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the

square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2013, September. Transportation and Construction Vibration Guidance Manual.

LOCAL REGULATIONS AND STANDARDS

Chapter 5-2 - NOISE

Sections:

5-201 - Declaration of policy.

It is declared to be the policy of the city that the peace, health, safety and welfare of the citizens of Lafayette require protection from excessive, unnecessary, annoying and unreasonable noises from any and all controllable noise sources in the community. It is the intention of the city council to control the adverse effect of such noise sources on the citizen under any normal condition of use, especially those conditions of use which have the most severe impact upon any person.

(Ord. 177 § 1 (part), 1977)

5-202 - Definitions.

For the purposes of this chapter, certain terms are defined as follows:

(a) "Ambient noise level" means the composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing average level of environmental noise at a given location, technically the level exceeded fifty percent of the time or L_{50}.

(b) "A-weighted sound level" means the sound level, expressed in decibels, as measured with a sound level meter using the A-weighted network to approximate the frequency characteristics of human hearing, as specified in American National Standards Institute specifications for sound level meters (ANSI S1.4-1971, or the latest approved version thereof). The level so measured is designated "dBA."

(c) "Commercial purpose" means the use, operation or maintenance of any sound-amplifying equipment for the purpose of advertising any business, or any goods, or any services, or for the purpose of attracting the attention of the public to, or advertising for, or soliciting patronage of customers to or for any performance, show, entertainment, exhibition or event, or for the purpose of demonstrating such sound equipment.

(d) "Construction" means any site preparation, assembly, erection, substantial repair, alteration or similar action, but excluding demolition, for or of public or private rights-of-way, structures, utilities or similar property.

(e) "Decibel" means a unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base ten of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

(f) "Emergency" means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage, which demands immediate action.

(g) "Emergency work" means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency.

(h) "Fixed noise source" means a stationary device which produces sounds while fixed or motionless, including but not limited to residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners and refrigeration equipment.

(i) "Impulsive sound" means sound of short duration, usually less than one second, with an abrupt onset and r Examples of sources of impulsive sound include explosions, hammer impacts and the discharge of firearms.

(j) "Local background noise level" means the minimum A-weighted sound level repeated during a six-minute period as measured on a sound level meter using "slow" meter response. The local background noise level shall be determined with the noise source at issue silent, and in the same location as the measurement of the noise level of the source or sources at issue.

(k) "Mobile noise source" means any noise source other than a fixed noise source.

(l) Motor vehicle" means any self-propelled vehicle as defined in the California Motor Vehicle Code, including all on-highway type motor vehicles subject to registration under said code, and all off-highway type motor vehicles subject to identification under said code.

(m) "Noise" means any sound which annoys or disturbs human beings or which causes or tends to cause an adverse psychological or physiological effect on human beings.

(n) "Noise control officer (NCO)" means the city manager or any other city employee or contractor designated by the city manager.

(o) "Noise level" means the maximum continuous sound level or repetitive peak level produced by a source or group of sources, as measured with a type 2 general purpose sound level meter using the A-weighted scale and with the meter response function set to "slow."

(p) "Noise zone" means any defined areas or regions of a generally consistent land use wherein the ambient noise levels are within a range of five dB.

(q) "Pure tone" means any sound which can be distinctly heard as a single pitch or a set of single pitches.

(r) "Real property boundary" means a line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person, but not including intra-building real property divisions.

(s) "Sound-amplifying equipment" means any device for the amplification of the human voice, music or any other sound, excluding (1) standard automobile radios when used and heard only by the occupants of the vehicle in which the radio is installed, and (2) warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle, used only for traffic safety purposes.

(t) "Sound" means an oscillation in pressure, particle displacement, particle velocity or other physical parameter in a medium with internal forces that cause compression and rarefaction of that medium. The description of sound may include any characteristic of such sound, including duration, intensity and frequency.

(u) "Sound level meter" means an instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement of sound levels, complying with the requirements for type 2 or at least type S2A general purpose meters as delineated in American National Standards Institute specifications for sound level meters, S1-4.1971, or the most recent revision thereof.

(v) "Weekdays" means every day, except Sundays and holidays.

(Ord. 177 § 1 (part), 1977)

5-203 - Noise control officer (NCO).

(a) In order to implement and enforce this chapter and for the general purpose of noise abatement and control,

the noise control officer shall have the authority to:

(1) Investigate and pursue possible violations of this chapter;

(2) Review public and private projects. On all public and private projects which are likely to cause noise in violation of this chapter and which are subject to mandatory review or approval by any city officer, employee or commission:

(A) Review for compliance with the intent and provisions of this chapter,

(B) Require sound analyses which identify existing and projected noise sources and associated noise levels,

(C) Require usage of adequate measures to avoid violation of any provision of this chapter;

(3) Perform inspections. After requesting permission to do so, and upon presentation of identification as the noise control officer, enter and/or inspect any private property, place, report or records at any time when granted permission by the owner, or by some other person with apparent authority to act for the owner. When permission is refused or cannot be obtained, a search warrant may be requested from a court of competent jurisdiction upon showing of probable cause to believe that a violation of this chapter may exist. Such inspection may include administration of any necessary tests;

(4) Develop measurement and enforcement procedures. In order effectively to implement and enforce this chapter, the noise control officer shall, within a reasonable time after the effective date of the ordinance codified in this chapter:

(A) Develop measurement standards and procedures which will further the purposes of this chapter,

(B) Develop administrative procedures which will provide for effective enforcement of this chapter.

(b) In the enforcement of this chapter, it shall be the policy of the noise control officer to stress voluntary compliance with the provisions hereof, and to seek resolution of problems through cooperation and mutual agreement between those involved.

(Ord. 177 § 1 (part), 1977)

5-204 - General noise regulation.

(a) Notwithstanding any other provision of this chapter, and in addition thereto, it shall be unlawful for any person wilfully to make or continue, or cause to be made or continued, any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to persons residing in the area.

(b) The standards which shall be considered in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

(1) The sound level of the objectionable noise;

(2) The ambient noise level;

(3) Whether the nature of the noise is usual or unusual;

(4) The proximity of the noise to residential sleeping facilities;

(5) The nature and zoning of the area from which the noise emanates;

(6) The density of the inhabitation of the area from which the noise emanates;

(7) The time of day or night the noise occurs;

(8) The duration of the noise and its tonal, informational or musical content;

(9) Whether the noise is continuous, recurrent or intermittent;

(10) Whether the noise is produced by a commercial or noncommercial activity.

(Ord. 177 § 1 (part), 1977)

5-205 - Maximum permissible noise levels by receiving land use.

(a) The noise standards for the various categories of land use identified by the noise control officer as presented in Table 5-205 shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

(b) No person shall produce, suffer or allow to be produced by any machine, animal or device, or any combination of same on any property owned, leased, occupied or otherwise controlled by such person, any noise which causes the noise level when measured on any other property to exceed:

(1) The noise standard for that land use as specified in Table 5-205 for a cumulative period of more than 30 minutes in any hour;

(2) The noise standard plus five dB for a cumulative period of more than 15 minutes in any hour;

(3) The noise standard plus ten dB for a cumulative period of more than five minutes in any hour;

(4) The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or

(5) The noise standard plus 20 dB for any period of time.

(c) If the measured local background noise level exceeds that permissible for the applicable time period within any of the first four noise limit categories described in subsection (b), the allowable noise exposure standard shall be increased in five-dB increments in each category as appropriate to encompass or reflect said ambient noise level.

Table 5-205

Outdoor Noise Limits

Receiving Land Use Category	Time Period	Noise Level Limit Standard—dBA
Single-family residential	10 p.m.—7 a.m.	45
	7 a.m.—10 p.m.	50
Multifamily residential schools, libraries, public spaces	10 p.m.—7 a.m.	50
	7 a.m.—10 p.m.	55

Commercial	10 p.m.—7 a.m.	55
	7 a.m.—10 p.m.	60

(d) In the event the alleged offensive noise contains a steady, audible tone such as a whine, screech or hum, or is an impulsive noise such as hammering, or contains music or speech conveying informational content, the standard limits set forth in Table 5-205 shall be reduced by five dB.

(Ord. 177 § 1 (part), 1977)

5-206 - Noise measurement procedure.

(a) Upon receipt of a complaint from a citizen, the noise control officer or his agent, equipped with sound-level measurement equipment satisfying the requirements specified in Section 5-202, shall investigate the complaint. If, in the opinion of the noise control officer, based upon the readily available and observable information and upon the detailed allegations of the complainant, there is probable cause to suspect a violation of this chapter, the noise control officer shall make and record sound level measurements and shall record all information pertinent to the complaint, including the following:

(1) Type of noise source;

(2) Location of noise source relative to complainant's property;

(3) Time period during which noise source is considered by complainant to be intrusive;

(4) Total duration of noise produced by noise source;

(5) Date and time of noise measurement survey;

(6) Height and location of the sound level meter microphone.

(b) Utilizing the "A" weighting scale of the sound level meter and the "slow" meter response ("fast" response for impulsive type sounds), the noise control officer or his agent shall measure the noise level at a position or positions along the complainant's property line closest to the noise source or at the location along the boundary line where the noise level is at maximum. In general, the microphone shall be located five feet above the ground and six feet or more from the nearest reflective surface, where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized. Using an acoustic calibrator, calibration of the meter used shall be performed immediately prior to the measurements.

(Ord. 177 § 1 (part), 1977)

5-207 - Prohibited acts.

Except as may otherwise be provided in this chapter, it shall be unlawful for any person to do, or cause to be done, any of the following prohibited acts:

(a) Radios, Television Sets, Musical Instruments and Similar Devices. Operating, playing or permitting the operation or playing of any radio, television set, phonograph, drum, musical instrument or similar device which produces or reproduces sound:

(1) Between the hours of ten p.m. and seven a.m. in such a manner as to create a noise disturbance

across a residential or commercial real property line or at any time to violate the provisions of Section 5-205, or

(2) In such a manner as to exceed the levels set forth for public space in Table 5-205, measured at a distance of at least 50 feet (15 meters) from such device operating on a public right-of-way or public space;

(b) Loudspeakers (Amplified Sound). Using or operating for any purpose any loudspeaker, loudspeaker system or similar device between the hours of ten p.m. and seven a.m., such that the sound therefrom creates a noise disturbance across a residential real property line, or at any time violates the provisions of Section 5-205;

(c) Animals and Birds. Owning, possessing or harboring any animal or bird which frequently or for long duration howls, barks, meows, squawks or makes other sounds which create a noise disturbance across a residential or commercial real property line;

(d) Loading and Unloading. Except for the regular collection of garbage and other refuse by a person franchised to engage in that activity, loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of ten p.m. and seven a.m. in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate the provisions of Section 5-205;

(e) Construction. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between the hours of ten p.m. and seven a.m. on weekdays, 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 or at any time violates the provisions of Section 5-205, except for emergency work of public service utilities. This subsection shall not apply to the use of domestic power tools for maintenance purposes;

(f) Domestic Power Tools and Equipment.

(1) Operating or permitting the operation of any portable, mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool for maintenance purposes between ten p.m. and seven a.m. so as to create a noise disturbance across a residential or commercial real property line,

(2) Any stationary installed motor, machinery, pump, etc. shall be sufficiently enclosed or muffled and maintained as not to create a noise disturbance or at any time violate the provisions of Section 5-205;

(g) Warning Signals. Operating or permitting the operation of any vehicle horns or other devices intended primarily to create a loud noise for warning purposes, when the vehicle is at rest, or when a situation endangering life, health or property is not imminent;

(h) Air-conditioning and Air-handling Equipment. Operating or permitting the operation of any air-conditioning or air-handling equipment in such a manner as to exceed the applicable sound levels contained in Table 5-207;

(i) Swimming Pool Equipment. Operating or permitting the operation of any residential swimming pool equipment between the hours of eight p.m. and eight a.m., except when below-freezing temperatures are predicted for the city, or on days of electric power shortages; or at other times in such a manner as to exceed the applicable sound levels contained in Table 5-207.

Table 5-207

Maximum Allowable Sound Levels

for Air-Conditioning, Air-Handling and Swimming Pool Equipment

Measurement Location	Units Installed Before 1-1-78	Units Installed On or After 1-1-78
Any point on neighboring residential property line, 5 feet above grade level, no closer than 3 feet from any wall	50	45
Center of neighboring patio, 5 feet above grade level, no closer than 3 feet from any wall	45	40

Outside the neighboring living area window nearest the equipment location, not more than 3 feet from the window opening, but at least 3 feet from any other surface	45	40
At 50 feet from equipment if the above locations are at greater distance:		
Commercial zone	60	55
Residential zone	50	55

(Ord. 177 § 1 (part), 1977)

5-208 - Special provisions.

(a) Daytime Exceptions. Any mobile noise source which does not produce a noise level exceeding 70 dBA at a distance of 25 feet under its most noisy condition of use shall be exempt from the provisions of Section 5-205 and 5-207 between the hours of eight a.m. and eight p.m. on weekdays, and between the hours of ten a.m.

and six p.m. on Sundays and holidays.

(b) Safety Devices. Aural warning devices which are required by law to protect the health, safety and welfare of the community shall not produce a noise level more than three dB above the standard or minimum level stipulated by law.

(c) Emergencies. Emergencies and emergency work are exempt from the provisions of this chapter.

(d) Construction and Maintenance. Notwithstanding any other provision of this chapter, between the hours of eight a.m. and eight p.m. on weekdays and between the hours of ten a.m. and six p.m. on Sundays and holidays, construction, alteration and repair activities which are authorized by a valid city permit; and maintenance activities such as lawn mowing, rotovating, tree trimming and painting, which require no city permit (but not including the operation of stationary, installed equipment, such as swimming pool and air-conditioning motors and devices), shall be allowed if they meet at least one of the following noise limitations:

(1) No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 50 feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible.

(2) The noise level at the nearest affected property shall not exceed 80 dBA.

(e) Sound Performances and Special Events. Sound performances and special events not exceeding 80 dBA measured at a distance of 50 feet are exempt from the provisions of this chapter when approval therefor has been obtained from the appropriate governmental entity.

(f) Agricultural Operations. All mechanical devices, apparatus or equipment associated with agricultural operations conducted on agricultural property are exempt from the provisions of this chapter unless in the vicinity of residential land uses, in which case the following conditions shall apply:

(1) Operations may take place only between six a.m. and eight p.m.;

(2) Such operations and equipment are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions;

(3) Such operations and equipment are associated with agricultural pest control through pesticide application, provided the application is made in accordance with applicable law and regulations; or

(4) Such devices utilized for pest control which incorporate stationary or mobile noise sources are operated only by permit issued by the noise control officer. The allowable hours and days for operation of these devices will be specified in the permit.

(g) Outdoor Activities. The provisions of this chapter shall not apply to occasional outdoor gatherings, public dances, shows and sporting and entertainment events, provided such events are conducted pursuant to a permit or license issued by the city.

(Ord. 177 § 1 (part), 1977)

5-209 - Exception permits.

If any person can prove to the noise control officer that a diligent investigation of available noise abatement techniques indicates that immediate compliance with the requirements of this chapter would be impractical or unreasonable, a permit to allow an exception from the provisions contained in all or a portion of this chapter may be issued, after appropriate notice and hearing, by the noise control officer, with suitable conditions to minimize the public detriment caused by such exception. Any such permit shall be of as short duration as reasonable, not exceeding six

months, but renewable for additional six-month periods upon a showing of good cause; and shall be conditioned by a schedule for compliance and by details of methods therefor in appropriate cases. Any person aggrieved by the decision of the noise control officer may appeal to the city council pursuant to the appeal procedures provided in Sections 4-118 and 4-119 of this code.

(Ord. 177 § 1 (part), 1977)

CHAPTER VII

NOISE

Adopted in entirety by Resolution 2002-56 on October 28, 2002

PURPOSE

The purpose of the Noise Section is to protect the health and welfare of the community by promoting development which is compatible with established noise standards. This section has been prepared in conformance with Government Code § 65302(f) and the guidelines adopted by the State Office of Noise Control, pursuant to Health and Safety Code § 46050.1. Existing and future noise problems in Lafayette and its Sphere of Influence are identified. Policies and implementation programs are provided to reduce the community's exposure to excessive noise levels. Accomplishing this task requires an evaluation of the noise from sources such as roads, highways, BART, and from stationary sources such as schools and businesses.

The Noise Chapter contains the following sections:

- A map of projected future noise contours
- Standards for indoor and outdoor noise exposure
- Policies and implementation programs to mitigate the major noise problems where possible, both in the present and in the foreseeable future

NOISE CHARACTERISTICS

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in Table 1.

Most of the sounds, which we hear in the environment, do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the mid-range frequency. This method is called "A" weighting, and the decibel level so measured is called the A-weighted sound level (dBA). In practice, the level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-levels measured in the environment and in industry are shown in Table 2 for different types of noise.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources which create a relatively steady background noise, often called ambient noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_{10}, L_{50}, and L_{90}, are commonly used. They are the A-weighted noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time period. A single number descriptor called the L_{eq} is now also widely used. The L_{eq} is the average A-weighted noise level during a stated period of time.

TABLE 1

DEFINITION OF ACOUSTICAL TERMS

Term	Definition
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency (Hz)	The number of complete pressure fluctuations per second above and below the atmospheric pressure.
A-Weighed Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighing filter network. The A-weighing 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.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded by 1%, 10%, 50% and 90% of the time during the measurement period.
Equivalent Noise Level (L_{eq})	The average A-weighted noise level during the measurement period.
L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 PM and 7:00 AM.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which 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: ILLINGWORTH & RODKIN, INC. ACOUSTICAL ENGINEERS, 1995

TABLE 2

TYPICAL NOISE LEVELS

At a Given Distance From Noise Source	Sound Levels (dBA)	Noise Environments	Subjective Impression
Civil Defense Siren (100')	130		
Jet Takeoff (200')	120		Threshold of Pain
	110	-Rock Music Concert	
Pile Driver (50')	100		Very Loud
Ambulance Siren			
	90	-Boiler Room	
Freight Cars (50')		-Printing Press Plant	
Pneumatic Drill (50')	80	-25 ft. From Hwy. 24*	
		-In Kitchen With Garbage Disposal Running	
Freeway (100')	70	-50 ft. from Moraga Road at City Limits*	Moderately Loud
		-50 ft. From Happy Valley Road at Palo Alto Drive*	
Vacuum Cleaner (10')	60	-Busy Department Store	
		-Typical Lafayette residential neighborhoods*	
Light Traffic (100')	50	-Private Business Office	
Large Transformer (200')		-Low density residential well shielded from traffic noise*	
	40	-Undeveloped open space in well shielded canyon*	Quiet
Soft Whisper (5')	30	-Quiet Bedroom	
	20	-Recording Studio	
	10		
	0		Threshold of Hearing

SOURCE: ILLINGWORTH & RODKIN, INC. ACOUSTICAL ENGINEERS, 1995
* SOURCE FOR OUTDOOR LOCATIONS: WILSON, IRHIG & ASSOCIATES, LAFAYETTE NOISE ELEMENT MARCH 1976

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Further, sensitivity to noise increases when people sleep at night. To account for human sensitivity to nighttime noise levels, a descriptor, the L_{dn} (day/night average sound level), was developed. The L_{dn} divides the 24-hour day into the daytime of 7:00 AM to 10:00 PM and the nighttime of 10:00 PM to 7:00 AM. The nighttime noise level is weighted 10 dB higher than the daytime noise level.

Human Response to Noise

The effects of noise on people can be categorized as follows:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as fear response, hearing loss

The levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise in the last category. Unfortunately, there is as yet no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by people.

The following relationships will be helpful in understanding the significance of increases in the A-weighted noise level.

- In short-term laboratory experiments, a change of 1 dB can just be perceived. Longer-term exposure to a 1 dB change in environmental noise is perceivable.
- Outside of the laboratory, a 3 dB change is considered a noticeable difference.
- A change in level of 5 dB is very obvious, and a noticeable change in community response would be expected.
- A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

In any typical noise environment about 10 percent of the population will object to any noise not of their own making and 25 percent will not react or complain at all, regardless of the level of noise being generated. Consequently, noise control measures are most beneficial to the remaining 65 percent of the population who are neither ultra sensitive nor insensitive to noise. Negative reaction to noise generally increases with the increase in difference between background (or ambient) noise and the noise generated from a particular source such as traffic or railroad operations. In most situations, noise control measures need to reduce noise by 5 to 10 dBA in order to effectively reduce complaints.

People generally have the ability to distinguish one sound from a background of sounds, such as a telephone ringing over music. However, certain noise levels can render a sound inaudible. For example, heavy trucks can interfere with a conversation. Face-to-face conversation usually can proceed where the noise level is up to 66 dBA, group conversations up to 50 to 60 dBA, and public meetings up to 45 or 55 dBA, without interruption.

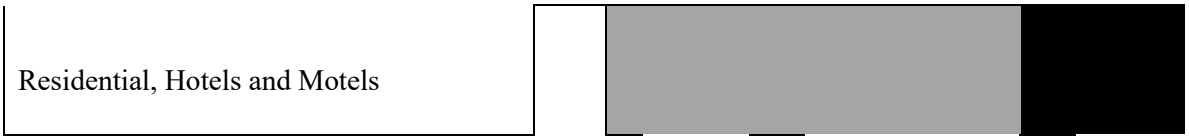
Sleep interference is more difficult to quantify, although studies have shown that progressively deeper levels of sleep require louder noise levels to cause a disturbance. The California Office of Noise Control (ONC) recommends that individual events within sleeping areas should not exceed 50 dBA in residential areas exposed to noise levels of 60 L_{dn}, or greater. Interior noise standards of 45 L_{dn} will help protect against sleep interference.

Environmental noise, in almost every case, produces effects, which are subjective in nature or involve interference with human activity. However, brief sounds at levels exceeding 70 dBA can produce temporary physiological effects such as constriction of blood vessels, changes in breathing and dilation of the pupils. Steady noises of 90 dBA have been shown to increase muscle tension and adversely affect simple decision-making. Long-term exposure to levels exceeding 70 dBA can cause hearing loss.

Noise and Land Use Compatibility Standards

The standards listed in Figure 1 should be used to evaluate the compatibility between land uses and future noise in Lafayette. Figure 1 should be used in combination with Map VII-1: *Noise Contours* to determine whether a proposed development or land use is located in an area requiring special noise mitigating measures. A proposed development or land use located in an area indicated by Map VII-1 as being within an acceptable level would not require any special noise abatement measures. An office building proposed in an area with an exterior noise level exceeding 65 dBA, however, would be required to have a combination of noise mitigating features such as additional noise insulation, building setbacks, noise walls or other measures as indicated by an acoustical study.

Figure 1



Normally Acceptable
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal, conventional construction, without any special insulation requirements.

Conditionally Acceptable
Specified land use may be permitted only after a detailed analysis of the noise reduction requirements and needed noise insulation features included in the design.

Unacceptable
New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

Explanation of Figure 1: Land Use Compatibility for Community Noise

A. Noise Source Characteristics

Figure 1 shows the ranges of exterior noise exposure which are considered to be acceptable, conditionally acceptable, or unacceptable for the specified land use. Figure 1 is used to determine whether or not the noise exposure requires mitigation in order to achieve a compatible noise environment.

Where the noise exposure is acceptable for the intended land use, new development may occur without requiring an evaluation of the noise environment.

Where the noise exposure would be conditionally acceptable a specified land use may be permitted only after a detailed analysis is made of the noise reduction requirements and the needed noise insulation features are included in the design. Such noise insulation features may include measures to protect noise sensitive outdoor activity areas (e.g. at residences, schools or parks) or may include building sound insulation treatments such as sound-rated windows to protect interior spaces in residences, schools, hospitals or other buildings which are sensitive to noise. Mitigation measures should be focused on reducing noise where it would have an adverse effect for the specified land use, outdoors and/or indoors depending upon the land use.

For areas where the existing noise environment is unacceptable, new development should generally not be undertaken because there may not be sufficient mitigations to bring the development into compliance with the noise policies of this Chapter.

B. Suitable Interior Environments

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB L_{dn} or L_{dn}. This requirement, coupled with the measured or calculated noise reduction performance of all types of structures under consideration, should govern the minimal acceptable distance to a noise source.

C. Acceptable Outdoor Environments

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered “normally acceptable” for that land use category may be appropriate.

The following considerations should be taken into account when using the Noise and Land Use Compatibility Standards:

1. The standard for maximum outdoor noise levels in residential areas is a L_{dn} of 60 dB. This standard is applied where outdoor use is a major consideration, such as backyards in single-family housing developments and recreation areas in multifamily developments. This standard should not be applied to outdoor areas such as small decks and balconies typically associated with multifamily residential developments, which can have a higher standard of 65 L_{dn}.

2. The maximum acceptable interior noise level in new residential development required by the State of California Noise Insulation Standards is an L_{dn} of 45. This standard continues to be applied to single family and all other residential development in Lafayette. In addition, the interior noise level for offices shall be L_{dn} 45 dB or less.

3. These standards are not intended to be applied reciprocally. In other words, if an area is currently below the desired noise standard, an increase in noise up to the maximum should not necessarily be permitted. The impact of a proposed project on an existing land use should be evaluated in terms of the potential for adverse community response, based on existing community noise levels, regardless of the compatibility standards.

4. The Noise and Land Use Compatibility Standards should be reviewed in relation to the specific source of noise. These standards are based on measurement systems, which average noise over a 24-hour period and do not take into account single-event noise sources. For example, aircraft noise normally consists of a higher single-noise event than vehicular traffic and has been linked to sleep interference and other significant problems, but occurs infrequently in Lafayette. Different noise sources yielding the same composite noise exposure do not necessarily create the same environment. Additional standards may be applied on a case-by-case basis where supported by acoustical analysis to mitigate the effects of single-event noise sources.

   Sensitive receptors are land uses, which are sensitive to noise such as hospitals, convalescent homes, schools, and libraries. Noise levels for these types of uses should not exceed those allowed in Figure 1. Map VII-1 *Noise Contours* indicates the projected environmental noise levels and the location of some noise sensitive uses in the City.

THE EXISTING NOISE ENVIRONMENT

The major source of noise in Lafayette is vehicular traffic, including automobiles, trucks, buses, and motorcycles. The level of vehicular noise generally varies with the volume of traffic, the number of trucks or buses, the speed of traffic, and the distance from the roadway. Noise generated by vehicular traffic in the City is greatest along State Route 24, which is the dominant noise source in Lafayette. Local roadways including Moraga Road, First Street, Pleasant Hill Road, and Mt. Diablo Boulevard are also significant sources of traffic noise.

Noise levels were measured at selected points throughout Lafayette in order to quantify the existing noise environment. Day/night average noise levels range from a high of about 82 dBA in rear yards of homes adjacent to State Route 24 down to about 49 dBA at locations on the shielded or far side of ridges from the highway. The residual L_{dn} of 49 dBA results from regular high altitude jet aircraft overflights.

Traffic noise levels throughout Lafayette were calculated using a noise contour program based on Federal Highway Administration research document FHWA RD77-108. The California Vehicle Noise Emission Levels (CALVENO) developed by Caltrans were used in the model. The noise contour data are tabulated in Tables 16 and 17 in the Appendix of the Lafayette General Plan Revision Environmental Impact Report. The calculated levels depend upon the number of automobiles, medium trucks and heavy trucks, and the speed of the vehicles to calculate the distance to noise contours. Implicit in this model is the assumption that the average noise level during the noisiest hour approximates the 24-hour day/night average noise level. The hourly data gathered during the long-term measurements indicate that along State Route 24 the L_{dn} is approximately 2 dB higher than the noisiest hour L_{eq}. This is due to high noise levels during the early morning hours and late evening hours. Noise levels measured along local streets indicate good correlation between the peak hour L_{eq} and the L_{dn}. The results of the computer modeling were adjusted to account for the results of the long-term measurements.

The Bay Area Rapid Transit (BART) system runs in the median of State Route 24 through Lafayette. The noise of the State Route 24 masks (obscures) the noise of BART at most locations most of the time. BART trains are audible at residences located north and south of State Route 24 in western Lafayette where freeway noise is partially shielded from these residences. Noise levels measured in western Lafayette indicate that maximum noise levels due to BART trains can reach about 80 dBA at the residences. BART noise is unique in character and therefore identifiable in comparison to traffic noise. The contribution of BART to the 24-hour average noise level is insignificant, however, due to the continuous noise levels generated by the freeway.

There are no significant sources of industrial noise or stationary noise sources in the Lafayette Planning Area.

The noise of high altitude jet aircraft is significant in Lafayette in areas where traffic noise is not significant. Aircraft are heard regularly during the daytime. Maximum noise levels resulting from jet aircraft overflights typically range from 50 to 60 dBA and can be as high as 65 to 70 dBA. The L_{dn} resulting from jet aircraft overflights is less than 50 dBA.

Goal N-1 Ensure that all new development is consistent with the standards for noise.

Policy N-1.1 General Noise Levels: The maximum allowable noise levels are established in this Chapter.

Policy N-1.2 Reduce Noise Impacts: Avoid or reduce noise impacts first through site planning and project design. Barriers and structural changes may be used as mitigation techniques only when planning and design prove insufficient.

Program N-1.2.1: Use the City's Noise Ordinance in environmental review of all development proposals and incorporate project design measures to reduce noise to allowable limits. (Formerly S-11.2.10)

Program N-1.2.2: Evaluate mitigation measures for projects that would cause a "substantial increase" in noise as defined by the following criteria or would generate unusual noise which could cause significant adverse community response:

a) cause the L_{dn} in existing residential areas to increase by 3 dB or more;

b) cause the L_{dn} in existing residential areas to increase by 2 dB or more if the L_{dn} would exceed 70 dB; or

c) cause the L_{dn} resulting exclusively from project-generated traffic to exceed an L_{dn} of 60 dBA at any existing residence.

A 3 dB increase would result if traffic increased by 100% over existing levels. It is recognized that there are locations where the outdoor criteria of an L_{dn} of 55 dB cannot be reasonably and feasibly achieved. These situations will be evaluated on a case-by-case basis to determine the appropriate level of mitigation.

Policy N-1.3 Noise and Land Use Compatibility Standards: Ensure that all new noise sensitive development proposals be reviewed with respect to *Figure 1: Noise and Land Use Compatibility Standards*. Noise exposure shall be determined through actual on-site noise measurements.

Policy N-1.4 Residential and Noise Sensitive Land Use Standards: Require a standard of 40 - 45 L_{dn} (depending on location) for indoor noise level for all new residential development including hotels and motels, and a standard of 55 L_{dn} for outdoor noise, except near the freeway. These limits shall be reduced by 5 dB for senior housing and residential care facilities.

Program N-1.4.1: Use the standards in Policy N-1.2.2 to determine the need for noise studies and require new developments to provide noise attenuation features as a condition of approving new projects.

Program N-1.4.2: Require an acoustical study for all new residential projects with a future L_{dn} noise exposure of 55 L_{dn} or greater. The study shall describe how the project will comply with the Noise and Land Use Compatibility Standards.

The studies shall also satisfy the requirements set forth in Title 24, part 2 of the California Government Code, Noise Insulation Standards, for multi-family attached dwellings, hotels, motels, etc. regulated by Title 24.

Program N-1.4.3: Require that all new single-family residential development meet the standards set forth in California Title 24, in addition to multi-family residential development, hotels, motels, etc.

Policy N-1.5 Interior Noise Standards Applied to Remodel Projects: Interior noise standards shall be applied to residential remodel projects where the remodeling is valued at 50% of the assessed value or greater.

Program N-1.5.1: Review all building permit applications for compliance with the applicable interior noise standards and require, as necessary, the appropriate noise mitigating features.

Goal N-2 Work to reduce noise to acceptable levels where it now exceeds those standards.

Policy N-2.1 Reduce Outdoor Noise in Existing Residential Areas: Reduce outdoor noise in existing residential areas where economically and aesthetically feasible.

Program N-2.1.1: Consider sound barrier walls, grading and landscaping, and change in traffic patterns as potential measures.

Policy N-2.2 Mitigate Noise Impacts: Mitigate noise impacts to the maximum feasible extent.

Program N-2.2.1: Require acoustical studies and mitigation measures for new developments and roadway improvements which affect noise sensitive uses such as schools, hospitals, libraries and convalescent homes.

Program N-2.2.2: Require acoustical studies of any project that would potentially generate non-transportation noise levels in a residential area such that noise levels would exceed the planning standards set forth in Program N-1.2.2.

Program N-2.2.3: Work with Caltrans to ensure that adequate noise studies are prepared and alternative noise mitigation measures are considered when state and federal funds are available.

Program N-2.2.4: Consider and carefully evaluate the noise impacts of all street, highway and other transportation projects.

Program N-2.2.5: Continue to seek state and federal funding to construct noise barriers where impact of noise can be significantly reduced and the project would be in keeping with all the goals & policies of the General Plan

Program N-2.2.6: Restrict truck traffic to designated routes.

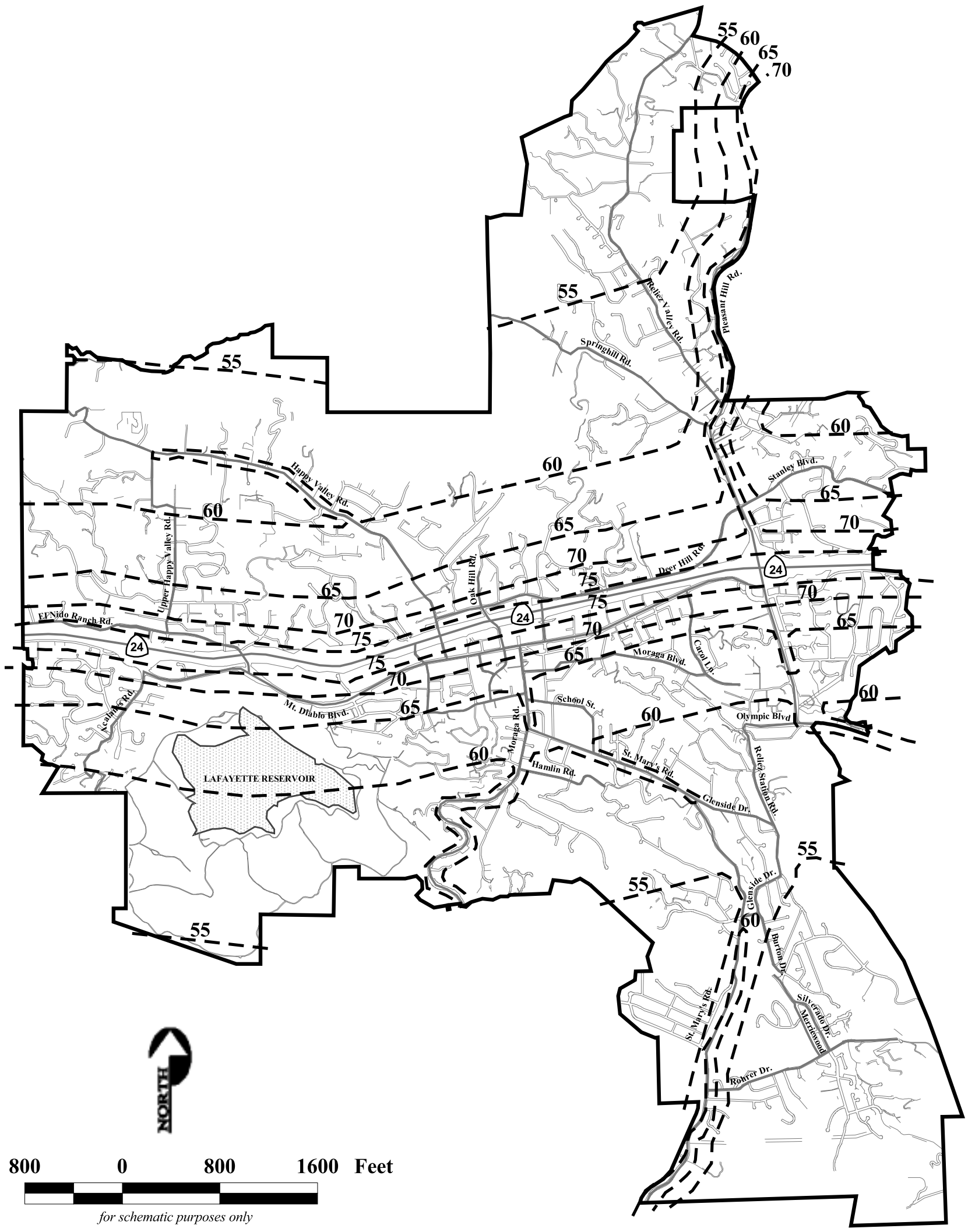
Program N-2.2.7: Recommend acoustical studies for all projects that would be exposed to noise levels in excess of those deemed normally acceptable, as defined in Figure 1.

Program N-2.2.8: Consider developing an ordinance that regulates the allowable hours of construction activities.

Program N-2.2.9: Consider developing standards to regulate the use of leaf blowers and like equipment.

(Just deleted) *(Moved to S-10.2.1)*

Program N-2.2.10: Consider using "quiet" pavement such as dense graded asphalt or open graded asphalt when re-paving streets.



Legend

60 Noise contour in decibels (dBA Ldn)

City Limits

Reservoir

Source: City of Lafayette, 1998

Map VII-1

Projected Noise Contours

City of Lafayette General Plan

TRAFFIC NOISE DATA

Typical Attendance Data from Applicant
And Trip Generation Estimates

Attendance and Employment (1)

	M	T	W	Th	F	Sat	Average weekday
Employee person trips/day	16	16	16	16	16	4	
Average attendance/day	77	100	91	47	53	75	74
Employee vehicle trips/day (round trips)	16	16	16	16	16	4	16
Attendee vehicle trips/day (round trips)	70	91	83	43	48	68	67
Total	86	107	99	59	64	72	83

Fehr & Peers 2020

Appendix F:
Transportation

Transportation Technical Appendix

A – Project Data

B – Project Driveway Traffic Operations Analysis

A – Project Data

Cancer Support Community October 8, 2020

Traffic Activity Data

Members

Average daily attendance by hour of members for the calendar year 2019. Visitors typically come to a one-hour program and then leave. These numbers do not include staff or activity leaders.

HOUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00 AM	-	7	-	-	-	-	8
9:00 AM	-	-	12	23	7	-	-
10:00 AM	0	10	-	28	1	3	33
11:00 AM	-	-	32	-	10	15	14
12:00 PM	-	-	-	-	1	6	8
1:00 PM	-	14	16	-	7	7	7
2:00 PM	-	5	4	-	8	5	5
3:00 PM	-	-	7	7	2	4	-
4:00 PM	-	17	2	3	-	-	-
5:00 PM	-	5	6	0	1	-	-
6:00 PM	-	-	21	28	0	14	-
7:00 PM	-	18	-	2	10	-	-
Total		77	100	91	47	53	75

Total visits by Members in 2019 was approximately 23,000.

Staff – full time (10 people)

Typically, these people arrive between 8 and 9 a.m. and leave between 4 and 5 p.m. Monday through Friday.

Staff (activity leaders) – part time (6-10 people during the course of the day)

These people are typically on site for a one-hour activity only.

Activities range from 6 to 11 per day Monday through Friday. The table below represents the schedule for three weeks in October 2020.

Week of	M	T	W	T	F	S
	# of activities each day					
10/12	8	11	11	6	6	0
10/19	9	10	8	6	7	3
10/26	9	10	8	3	6	1
Avg.	8.7	10.3	9.0	5.0	6.3	1.3

Special Events Chart

CSC Events

Event	#/Year	Typical Day/Time	Average Attendance	Total Vehicles (1)
Kids Circle	12	Saturdays at 10:00am	31	16
Guest speaker	24	Tues or Wed at 6:00pm	37	33
Social event	6	Tues or Wed at 6:00pm	57	50

(1) Best estimate.

B – Project Driveway Operations Analysis

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	461	5	20	693	0	0
Future Vol, veh/h	461	5	20	693	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	-	-	60	-	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	501	5	22	753	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	506	0	925	253
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1055	-	268	746
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	630	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1055	-	262	746
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1055	-
HCM Lane V/C Ratio	-	-	-	0.021	-
HCM Control Delay (s)	0	-	-	8.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1039	5	19	558	2	8
Future Vol, veh/h	1039	5	19	558	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	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	1129	5	21	607	2	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1134	0	1478	567
Stage 1	-	-	-	-	1132	-
Stage 2	-	-	-	-	346	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	612	-	117	467
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	612	-	113	467
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	665	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	378	-	-	612	-
HCM Lane V/C Ratio	0.029	-	-	0.034	-
HCM Control Delay (s)	14.8	-	-	11.1	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1039	10	40	558	2	8
Future Vol, veh/h	1039	10	40	558	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	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	1129	11	43	607	2	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1140	0	1525	570
Stage 1	-	-	-	-	1135	-
Stage 2	-	-	-	-	390	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	609	-	109	465
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	653	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	609	-	101	465
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	607	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	372	-	-	609	-
HCM Lane V/C Ratio	0.029	-	-	0.071	-
HCM Control Delay (s)	15	-	-	11.4	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	490	5	20	780	0	0
Future Vol, veh/h	490	5	20	780	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	-	-	60	-	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	533	5	22	848	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	538	0	1004	269
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	468	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1026	-	238	729
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1026	-	233	729
Mov Cap-2 Maneuver	-	-	-	-	365	-
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	584	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1026	-
HCM Lane V/C Ratio	-	-	-	0.021	-
HCM Control Delay (s)	0	-	-	8.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1167	5	19	605	2	8
Future Vol, veh/h	1167	5	19	605	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	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	1268	5	21	658	2	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1273	0	1642	637
Stage 1	-	-	-	-	1271	-
Stage 2	-	-	-	-	371	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	541	-	91	420
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	668	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	541	-	87	420
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	332	-	-	541	-
HCM Lane V/C Ratio	0.033	-	-	0.038	-
HCM Control Delay (s)	16.2	-	-	11.9	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1167	10	40	605	2	8
Future Vol, veh/h	1167	10	40	605	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	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	1268	11	43	658	2	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1279	0	1689	640
Stage 1	-	-	-	-	1274	-
Stage 2	-	-	-	-	415	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	539	-	84	418
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	539	-	77	418
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	584	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	327	-	-	539	-
HCM Lane V/C Ratio	0.033	-	-	0.081	-
HCM Control Delay (s)	16.4	-	-	12.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	-

Appendix G:

Tribal Cultural Resources

AB 52 Consultation

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

October 9, 2020

Nancy Tran, Senior Planner
City of Lafayette

Via Email to: ntran@ci.lafayette.ca.us

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Cancer Support Community Project, Contra Costa County

Dear Ms. Tran:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact all the tribes on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Sarah.Fonseca@nahc.ac.gov.

Sincerely,

Sarah Fonseca
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Contra Costa County
10/9/2020

Amah MutsunTribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Road — Costanoan
Woodside, CA, 94062
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Chicken Ranch Rancheria of Me-Wuk Indians
Lloyd Mathiesen, Chairperson
P.O. Box 1159 — Me-Wuk
Jamestown, CA, 95327
Phone: (209) 984 - 9066
Fax: (209) 984-9269
lmathiesen@crtribal.com

Guidiville Indian Rancheria
Merlene Sanchez, Chairperson
P.O. Box 339 — Pomo
Talmage, CA, 95481
Phone: (707) 462 - 3682
Fax: (707) 462-9183
admin@guidiville.net

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court — Costanoan
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonkonsulting.com

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 — Costanoan
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyon.org

Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano,
20885 Redwood Road, Suite 232 — Costanoan
Castro Valley, CA, 94546
Phone: (408) 205 - 9714
marellano@muwekma.org

Muwekma Ohlone Indian Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
20885 Redwood Road, Suite 232 — Costanoan
Castro Valley, CA, 94546
Phone: (408) 464 - 2892
cnijmeh@muwekma.org

North Valley Yokuts Tribe
Katherine Perez, Chairperson
P.O. Box 717 — Costanoan
Linden, CA, 95236 — Northern Valley
Phone: (209) 887 - 3415 — Yokut
canutes@verizon.net

North Valley Yokuts Tribe
Timothy Perez, MLD Contact
P.O. Box 717 — Costanoan
Linden, CA, 95236 — Northern Valley
Phone: (209) 662 - 2788 — Yokut
huskanam@gmail.com

The Ohlone Indian Tribe
Andrew Galvan,
P.O. Box 3388 — Bay Miwok
Fremont, CA, 94539 — Ohlone
Phone: (510) 882 - 0527 — Patwin
Fax: (510) 687-9393 — Plains Miwok
chochenyo@AOL.com

Wilton Rancheria
Dahlton Brown, Director of Administration
9728 Kent Street — Miwok
Elk Grove, CA, 95624
Phone: (916) 683 - 6000
dbrown@wiltonrancheria-nsn.gov

Wilton Rancheria
Jesus Tarango, Chairperson
9728 Kent Street — Miwok
Elk Grove, CA, 95624
Phone: (916) 683 - 6000
Fax: (916) 683-6015
jtarango@wiltonrancheria-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Cancer Support Community Project, Contra Costa County.

The Confederated Villages of Lisjan
Corrina Gould, Chairperson
10926 Edes Avenue
Oakland, CA, 94603
Phone: (510) 575 - 8408
cvltribe@gmail.com

Bay Miwok
Ohlone
Delta Yokut

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Cancer Support Community Project, Contra Costa County.

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano,
20885 Redwood Road, Suite 232, Castro Valley, CA, 94546
Phone: (408) 205 - 9714
marellano@muwekma.org

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

Project Description: The proposed project is a new campus for the Cancer Support Community, including a building to house programs for those dealing with cancer and their families and support groups. The project includes a 11,000 square foot building, 49 vehicular parking spaces, an outdoor gathering space, a boardwalk, a greenhouse, and an amphitheater or outdoor movement space (see attached figure). The project includes an outdoor community space for visitor use located on the southern portion of the site. Outdoor amenities include an outdoor plaza, Swerve bike racks, removable bollards for an EVA lane, an ADA-accessible boardwalk, a playground, a greenhouse, a vegetable garden, an overlook, and an amphitheater and outdoor movement space. In total, the proposed project would include approximately 4,350 square feet of usable outdoor space for visitors, with 3,100 square feet on the front patio and 1,250 square feet within the rear amphitheater. 14 to 19 existing trees are proposed for removal. The proposed project would introduce 39 trees on the project site and along the perimeter. Proposed trees include California Buckeye (*Aesculus californica*), Western Hazelnut (*Corylus cornuta*), Coast live oak (*Quercus agrifolia*), Valley Oak (*Quercus lobata*), and Vine Maple (*Acer circinatum*). Proposed landscaping would also include plantings of grasses, shrubs, and other ground cover. Vehicular access to the site is from a gravel road turn out via Mt. Diablo Boulevard.

The City of Lafayette is the lead agency responsible for the California Environmental Quality Act (CEQA). As such, the City would like to provide you with an opportunity to communicate concerns you might have regarding places within the project area that may be important to your community. The City requests your participation in the protection of cultural resources, sacred lands or other heritage sites, with the understanding that you or other members of the community might possess specialized knowledge of the project area. CSP requested a Sacred Lands File search, which was completed by NAHC Cultural Resources Analyst, Sarah Fonseca on October 9, 2020, with positive results.

Please respond within 30 days, pursuant to PRC 21080.3.1(d) if you would like to consult on this project. Please consider this letter and preliminary project information as formal notification of a proposed project as required under CEQA, specifically Public Resources Code 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52).

If you or any of your tribal members have any questions or concerns regarding this project, please contact: Nancy Tran, Senior Planner, City of Lafayette Planning and Building Department, 3675 Mount Diablo Boulevard, #210, Lafayette, California 94549, or emailed to: ntran@ci.lafayette.ca.us.

Thank you for your consideration of this request.

Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
Wilton Rancheria
Dahlton Brown, Director of Administration
9728 Kent Street, Elk Grove, CA, 95624
Phone: (916) 683 - 6000
dbrown@wiltonrancheria-nsn.gov

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Thank you for your consideration of this request.

Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
The Ohlone Indian Tribe
Andrew Galvan,
P.O. Box 3388, Fremont, CA, 94539
Phone: (510) 882-0527, Fax: (510) 687-9393
chochenyo@AOL.com

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
The Confederated Villages of Lisjan
Corrina Gould, Chairperson
10926 Edes Avenue, Oakland, CA, 94603
Phone: (510) 575 - 8408
cvltribe@gmail.com

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Thank you for your consideration of this request.

Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
Chicken Ranch Rancheria of Me-Wuk Indians
Lloyd Mathiesen, Chairperson
P.O. Box 1159, Jamestown, CA, 95327
Phone: (209) 984 – 9066, Fax: (209) 984-9269
lmathiesen@crtribal.com

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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If you or any of your tribal members have any questions or concerns regarding this project, please contact: Nancy Tran, Senior Planner, City of Lafayette Planning and Building Department, 3675 Mount Diablo Boulevard, #210, Lafayette, California 94549, or emailed to: ntran@ci.lafayette.ca.us.

Thank you for your consideration of this request.

Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
Muwekma Ohlone Indian Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
20885 Redwood Road, Suite 232, Castro Valley, CA, 94546
Phone: (408) 464 - 2892
cnijmeh@muwekma.org

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Thank you for your consideration of this request.

Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
North Valley Yokuts Tribe
Katherine Perez, Chairperson
P.O. Box 717, Linden, CA, 95236
Phone: (209) 887 - 3415
canutes@verizon.net

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Thank you for your consideration of this request.

Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
Guidiville Indian Rancheria
Merlene Sanchez, Chairperson
P.O. Box 339, Talmage, CA, 95481
Phone: (707) 462 – 3682, Fax: (707) 462-9183
admin@guidiville.net

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Thank you for your consideration of this request.

Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28, Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyon.org

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court, San Jose, CA, 95122
Phone: (408) 673-0626
kanyon@kanyonkonsulting.com

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
Wilton Rancheria
Jesus Tarango, Chairperson
9728 Kent Street, Elk Grove, CA, 95624
Phone: (916) 683 – 6000, Fax: (916) 683-6015
jtarango@wiltonrancheria-nsn.gov

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 14th, 2020
North Valley Yokuts Tribe
Timothy Perez, MLD Contact
P.O. Box 717, Linden, CA, 95236
Phone: (209) 662 - 2788
huskanam@gmail.com

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Sincerely,

Nancy Tran, Senior Planner, October 14, 2020

AB 52 Consultation for the Cancer Support Community Initial Study / Mitigated Negative Declaration

October 13th, 2020
Amah Mutsun Tribal Band of
Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Road, Woodside, CA, 94062
Phone: (650) 851 – 7489, Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Project Location: The project site is located at 4011 Mt. Diablo Boulevard in the City of Lafayette, Contra Costa County, California. The project site comprises one assessor's parcel, Assessor's Parcel Number (APN) 252-050-014, which is approximately 5.75 acres in size. The project site is undeveloped with a gravel access road and gated entrance. Existing vegetation includes 144 trees comprised of California native species and ornamental varieties. The project site is not included on a hazardous waste list enumerated under Section 65962.5 of the Government Code.

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Sincerely,

Nancy Tran, Senior Planner, October 13, 2020

PLACEWORKS

3 MacArthur Place, Suite 1100
Santa Ana, California 92707
t 714.966.9220

www.placeworks.com