CHAPTER 3: ENVIRONMENTAL IMPACT ANALYSIS

This chapter sets forth the physical and regulatory environmental setting and addresses the environmental impacts of the Specific Plan (proposed plan) with respect to 15 environmental resource areas. The discussions of the environmental setting describe the present physical conditions, or baseline conditions, in the Specific Plan area (plan area). The baseline used for the analysis of environmental impacts under the California Environmental Quality Act (CEQA) reflects the conditions present at the time the Notice of Preparation (NOP) for this Environmental Impact Report (EIR) was published. The potential impacts of the proposed plan are compared against the existing baseline conditions for each environmental resource.

Environmental Topics Addressed in this EIR

The proposed plan is analyzed in this EIR from the perspective of the following 15 environmental resource areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions and Energy
- Hazards, Hazardous Materials, and Wildfire
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Utilities and Service Systems

Format of the Environmental Analysis

Each environmental resource area is analyzed in individual sections that include the subsections summarized below.

Introduction

This subsection summarizes what will be discussed in the respective environmental topic section, states what informational documents are used as the basis for the section, and indicates what related comments, if any, were received during the EIR public scoping period.

Environmental Setting

This subsection describes the existing, baseline physical conditions of the plan area and surroundings (e.g., existing land uses, transportation conditions, noise environment) with respect to each resource topic at the time the NOP was issued. Conditions are described in sufficient detail and breadth to allow a general understanding of the environmental impacts associated with implementation of the proposed plan.

Regulatory Framework

This subsection describes the relevant federal, State, regional, and local regulatory requirements that are directly applicable to the environmental topic being analyzed.

Impacts and Mitigation Measures

This subsection evaluates the potential for the implementation of the proposed plan to result in direct and indirect adverse impacts on the existing physical environment, with consideration of both construction and operation impacts. The significance criteria questions for environmental impacts are listed at the beginning of this subsection, followed by the discussion of the approach to the analysis and specific thresholds of significance that have been applied to evaluate the impacts of the proposed plan.

Indirect impacts are discussed only for those resources for which they have the potential to occur (e.g., population and housing, cultural resources, air quality, and biological resources). Both plan-level and cumulative-level impacts are analyzed. Plan-level impacts could result from actions related to implementation of the proposed plan. Cumulative-level impacts could result from implementation of the proposed plan in combination with other identified cumulative projects in the study area. As discussed in "Cumulative Impacts" below, the projects listed in Table 3-1 in conjunction with the proposed plan, are considered the cumulative scenario for the analysis of cumulative impacts.

Impacts are analyzed and the respective assessment and findings are provided, applying the following levels of significance:

- **No Impact.** A determination of No Impact is reached if no potential exists for impacts or if the environmental resource does not occur in the plan area or the area of potential impacts.
- **Less Than Significant Impact.** This determination applies if the impact does not exceed the defined significance criteria or would be eliminated or reduced to a less than significant level through compliance with existing local, state, and federal laws and regulations. No mitigation is required for impacts determined to be less than significant.
- **Less Than Significant Impact with Mitigation.** This determination applies if the proposed plan would result in a significant impact, exceeding the established significance criteria, but feasible mitigation is available that would reduce the impact to a less than significant level.
- **Significant and Unavoidable Impact.** This determination applies if the proposed plan would result in an adverse impact that exceeds the established significance criteria, and no feasible mitigation is available to reduce the impact to a less than significant level. Therefore, the residual impact would be significant and unavoidable.
- **Significant and Unavoidable Impact with Mitigation.** This determination applies if the proposed plan would result in an adverse impact that exceeds the established significance criteria, and although feasible mitigation might lessen the impact, the residual impact would be significant, and, therefore, the impact would be unavoidable.

Impacts are defined in terms of their context and intensity. Context is related to the uniqueness of a resource; intensity refers to the severity of the impact. Where applicable, best management practices or improvement measures, or both, are incorporated into the proposed plan to limit the potential for a significant impact. Where necessary, mitigation measures are identified for significant impacts to limit the degree or lower the magnitude of the impact; rectify the impact by repairing, rehabilitating, or restoring the affected environment; or compensate for the impact by replacing or providing substitute resources or environments. These impacts conclude with a finding of Less than Significant Impact with Mitigation. Where no mitigation measures are necessary, relevant impacts are concluded to be Less than Significant or to have No Impact.

As part of the impact analysis, mitigation measures are identified, where feasible, for impacts considered significant or potentially significant consistent with CEQA Guidelines Section 15126.4, which states that an EIR "shall describe feasible measures which could minimize significant adverse impacts." CEQA requires that mitigation measures have an essential nexus and be roughly proportional to the significant impact identified in the EIR. The project sponsors are required to implement all identified mitigation measures identified in this EIR, and the lead agency (in this case, the City of Pleasant Hill) is responsible for overseeing implementation of such mitigation measures.

Pursuant to CEQA Guidelines Section 15126.4, mitigation measures are not required for environmental impacts that are found not to be significant. Therefore, for resource topics where this EIR finds the physical environmental impact of the proposed plan to be less than significant, but for which the City of Pleasant Hill Planning Division has identified measures that would further lessen the proposed plan's already less than significant impacts, these measures have been identified as "improvement measures." The City has indicated that if the proposed plan were approved, it would incorporate all improvement measures identified in this EIR as part of the proposed plan.

Impacts are numbered and shown in bold type. The corresponding mitigation measures, where identified, are numbered and indented, and follow the impact statements. Impacts and mitigation measures are numbered consecutively within each topic and include an abbreviated reference to the impact section (e.g., "LUP" for Land Use and Planning). The following abbreviations are used for individual topics:

- Aesthetics (AES)
- Air Quality (AIR)
- Biological Resources (BIO)
- Cultural Resources and Tribal Cultural Resources (CUL)
- Geology and Soils (GEO)
- Greenhouse Gas Emissions and Energy (GHG)
- Hazards, Hazardous Materials, and Wildfire (HAZ)
- Hydrology and Water Quality (HYD)
- Land Use and Planning (LUP)
- Noise (NOI)
- Population and Housing (POP)
- Public Services (PUB)
- Recreation (REC)
- Transportation (TRANS)
- Utilities and Service Systems (UTIL)

Cumulative Impacts

The discussion of cumulative impacts in this subsection analyzes the cumulative impacts of the proposed plan, taken together with other past, present, and reasonably foreseeable future projects producing related impacts. The goal of this analysis is to determine whether the overall long-term impacts of all such projects would be cumulatively significant, and to determine whether the proposed plan itself would cause a "cumulatively considerable" incremental contribution to any such cumulatively significant impacts. To determine whether the overall long-term impacts of all such projects would be cumulatively significant, the analysis generally considers the following:

- The area in which impacts of the proposed plan would be experienced;
- The impacts of the proposed plan that are expected in the area;
- Other past, proposed, and reasonably foreseeable projects that have had or are expected to have impacts in the same area;
- The impacts or expected impacts of these other projects; and
- The overall impact that can be expected if the individual impacts from each project are allowed to accumulate.

"Cumulative impacts" refers to two or more individual impacts that, when considered together, are considerable, or that compound or increase other environmental impacts (CEQA Guidelines § 15355). Cumulative impacts can result from individually minor but collectively significant impacts taking place over time (40 Code of Federal Regulations [CFR] 1508.7). If the analysis determines that the potential exists for the proposed plan, taken together with other past, present, and reasonably foreseeable future projects, to result in a significant or adverse cumulative impact, the analysis then determines whether the proposed plan's incremental contribution to any significant cumulative impact is itself significant (i.e., "cumulatively considerable"). The cumulative impact analysis for each individual resource topic is presented in each resource section of this chapter immediately after the description of the direct impacts and identified mitigation measures.

Table 3-1 lists the relevant cumulative projects considered for the environmental analysis, and Exhibit 3-1 shows the locations of the cumulative projects.

Table 3-1: Cumulative Projects

No.	Name	Jurisdiction	Land Use	Project Development			
				Units	Gross Square Footage	Location	Status
1	Cambria Hotel	City of Pleasant Hill	Hotel	155 guest rooms	—	313, 3195 North Main Street and 1531 Oak Park Boulevard (intersection of Oak Park Boulevard and Main Street)	Pending

Table 3-1 (cont.): Cumulative Projects

No.	Name	Jurisdiction	Land Use	Project Development			
				Units	Gross Square Footage	Location	Status
2	Pleasant Hill Day Care Center	City of Pleasant Hill	Day care facility	72 students	5,117	409 Boyd Road (Boyd Road at Kahrs Avenue)	Approved
3	Fountainhead Montessori Day Care	City of Pleasant Hill	Day care facility	72 students	—	1715-1725 Oak Park Boulevard (southeast corner of Oak Park Boulevard and Monticello Avenue)	Approved
4	Blake-Griggs Project	City of Pleasant Hill	Multi-family residential development	210 multi-family homes	—	85 Cleaveland	Pending
Sources: City of Pleasant Hill 2019; compiled by FirstCarbon Solutions (FCS) 2019.							

THIS PAGE INTENTIONALLY LEFT BLANK

Source: Bing Aerial Imagery.

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 3-1
Cumulative Projects Location Map

THIS PAGE INTENTIONALLY LEFT BLANK

3.1 - Aesthetics

3.1.1 - Introduction

This section describes the existing visual character, views, light, and glare conditions in the Specific Plan area (plan area) as well as the relevant regulatory framework. This section also evaluates the possible impacts related to aesthetics that could result from implementation of the Specific Plan (proposed plan). Information included in this section is based on site reconnaissance and photo inventory, plan-specific lighting simulations included in this section, as well as the Pleasant Hill 2003 General Plan and Environmental Impact Report (EIR), Pleasant Hill Municipal Code, and photometric plan peer review memo prepared by Lindsley Lighting included in Appendix B. The following comments were received during the EIR scoping period related to aesthetics:

- Inquiry regarding plan-related lighting and light spillover impacts on wildlife and neighboring residences; and
- Question regarding the plan-related impacts on dark sky resources.

3.1.2 - Environmental Setting

Visual Character

Visual character in the California Environmental Quality Act (CEQA) context is an impartial description of the defining physical features, landscape patterns, and distinctive physical qualities within a landscape. Visual character is informed by the composition of land, vegetation, water, and structure and their relationship (or dominance) to one another, and by prominent elements of form, line, color, and texture that combine to define the composition of views. Visual character-defining resources and features within a landscape may derive from notable landforms, vegetation, land uses, building design and façade treatments, transportation facilities, overhead utility structures and lighting, historic structures or districts, or panoramic open space.

City of Pleasant Hill Area

The City of Pleasant Hill is located in the central portion of Contra Costa County. The City is bordered to the south by the City of Walnut Creek, to the north by the cities of Martinez and Pacheco, to the east by the City of Concord, and to the west by the City of Lafayette. The City covers a total of 8.2 square miles. The topography includes low lying and relatively flat terrain to ridgelines along the eastern edge of the Briones Hills. The physical environment of the City is suburban in character.

Interstate 680 (I-680) runs through the southeastern portion of the City of Pleasant Hill. The City contains protected scenic hillsides, preserved historic structures, and large trees. Grayson Creek also meanders through the City flowing from south to north.

Plan Area

The plan area is located within the southeastern portion of the City and covers 16.60 acres of developed and undeveloped land immediately north of the intersection of Oak Park Boulevard and Monticello Avenue. The plan area is relatively level with elevations ranging from 71 feet above mean

sea level (MSL) to 76 feet above MSL, sloping gently to the north and east. Field visits by FirstCarbon Solutions (FCS) to the plan area and surrounding area were conducted at various times in 2018 and in January and February 2019 to document existing visual conditions and to observe the visual character of the surrounding area.

Residential Project (1750 Oak Park Property—Existing Library and Vacant Administrative Offices)

The existing Pleasant Hill Library and vacant administrative offices, associated parking lots, and a small vacant area with trees occupy the Residential Project site. In addition, this property contains landscaping of ornamental trees and shrubbery around the entire site.

Civic Project

The Civic Project site is currently vacant. Scattered trees are located along Oak Park Boulevard, Monticello Avenue, and within the Grayson Creek Corridor. The remainder of the Civic Project site is predominantly open and covered with grasses and intermittent shrubs. A sidewalk runs the full length of Monticello Avenue on the western side. The eastern side of Monticello Avenue includes nominal and unmaintained landscaping areas, along with an informal dirt/gravel parking area. Overhead utility lines are located along both sides of Monticello Avenue.

Oak Park Boulevard contains a sidewalk on the north side of the street, and intermittently along the south side of the street. Bike lanes run the full length of the street segment on the north and south sides of the street. Overhead utility lines also run the full length of Oak Park Boulevard on the north and south sides of the street.

Scenic Resources

Scenic resources typically involve prominent, unique, and identifiable natural features in the environment (e.g., trees, rock outcroppings, islands, ridgelines, channels of water, and aesthetically appealing open space or corridor) and cultural features or resources (e.g., regional or architecturally distinctive buildings, or structures that serve as a focal point of interest).

City of Pleasant Hill Area

The Pleasant Hill 2003 General Plan designates aesthetically pleasing corridors such as gateways, key streets, scenic corridors, and scenic routes as visual or scenic resources. Pleasant Hill 2003 General Plan goals, policies, and programs aim to preserve these resources and views towards them.

Plan Area

The plan area does not contain any City-designated scenic resources.

Views

Views may be generally described as panoramic views of a large geographic area for which the field of view can be wide and extend into the distance. Associated vantage points provide an orientation from publically accessible locations. Examples of distinctive views include urban skylines, valleys, mountain ranges, or large bodies of water.

City of Pleasant Hill Area

The California Department of Transportation (Caltrans) State Scenic Highway Mapping System designates portions of I-680 as a Scenic Route; however, the portion that runs through Pleasant Hill is not designated as scenic. Contra Costa County designates Reliez Valley Road and Taylor Boulevard within the City of Pleasant Hill as Scenic Routes, both of which are located more than 1 mile to the west of the project site.[1] Furthermore, the City of Pleasant Hill designates the following outstanding views as Scenic Routes:

- Alhambra Avenue, also designated as a Scenic Route within the City of Martinez;
- Grayson Road, from Reliez Valley Road to Taylor Boulevard, which connects the County Scenic Routes of Reliez Valley Road and Taylor Boulevard;
- Golf Club Road, also a designated City bikeway;
- Morello Avenue north of Paso Nogal Road; and
- Paso Nogal Road southwest of Morello Avenue, also a designated City bikeway and part of the East Bay Regional Park District regional trail system.

The City also designates the following roads as scenic corridors, which merit additional landscaping:

- Geary Avenue
- Oak Park Boulevard
- Pleasant Hill Road

Mount Diablo, rising to an elevation of 3,849, is the most prominent topographical feature in the area and, thus, is visible from points along Oak Park Boulevard as well as from the other scenic corridors listed above.

Plan Area

The plan area includes a portion of Oak Park Boulevard, a City-designated Scenic Corridor. Vehicles, bicyclists, and pedestrians traveling eastbound along Oak Park Boulevard through the plan area have intermittent views of Mount Diablo. The existing views of Mount Diablo from Monticello Avenue are obstructed by intervening trees and only the top portion of the mountain is visible. In addition, there is no continuous ridgeline visible from the plan area, only the peaks. The East Bay Municipal Utilities District (EBMUD) trail along Grayson Creek provides views of Oak Park Boulevard, as well as intermittent views towards Mount Diablo.

In March 2019, FCS conducted field visits to the plan area to observe and document the existing visual quality and character of the area. Exhibit 3.1-1 identifies and describes specific viewpoint locations near the plan area that provide a representative cross section of visual images and information about the existing aesthetic conditions of the immediate surrounding area. These locations represent publicly accessible views for a variety of observers in the area, ranging from motorists traveling along Oak Park Boulevard, located south of the plan area, to pedestrians and bicyclists traveling along the EBMUD trail or urban sidewalks. As summarized in Table 3.1-1, various

[1] Pleasant Hill 2003 General Plan 2003, page 15.

publicly accessible locations in the Pleasant Hill area offer views toward and/or through the plan area. Exhibit 3.1-2 through Exhibit 3.1-5 demonstrate both the existing daytime and nighttime views from the identified viewpoints.

Table 3.1-1: Summary of Viewpoint Locations for Existing Views

Viewpoint Number	View Description
1	Existing View from east of EBMUD Trail looking west toward the plan area
2	Existing View from Pleasant Hill Instructional Garden north of Hawthorne Drive looking southeast toward the plan area
3	Existing View from Pleasant Hill Library west of Monticello Avenue looking northeast across the plan area
4	Existing view from sidewalk on the southern side of Oak Park Boulevard looking north toward the plan area
Source: FCS 2019.	

View 1—Existing View from east of EBMUD Trail looking west toward the plan area

The viewpoint along EBMUD Trail, a public trail, is located along the eastern boundary of plan area, shown in Exhibit 3.1-2, photograph A (daytime) and photograph B (nighttime). The viewpoint is located east of the plan area, facing west toward the center of the plan area. Existing views of the plan area consist primarily of vegetation, trees, and an overhead power line.

View 2—Existing View from Pleasant Hill Instructional Garden, north of Hawthorne Drive looking southeast toward the plan area

The viewpoint at the Pleasant Hill Instructional Gardens is located north of the plan area and north of Hawthorne Drive, shown in Exhibit 3.1-3, photograph C (daytime) and photograph D (nighttime). The existing southeastward view of the plan area is obstructed by the Pleasant Oaks Park, vegetation, and Pleasant Hill Middle School.

View 3—Existing View from Pleasant Hill Library west of Monticello Avenue looking northeast across the plan area

This viewpoint is located from the existing Pleasant Hill Library on the sidewalk west of Monticello Avenue, shown in Exhibit 3.1-4, photograph E (daytime) and photograph F (nighttime). Existing northeastward views across Monticello Avenue are unobstructed and the Pleasant Hill Middle School is visible behind trees. No ridgelines are visible from this view.

View 4—Existing View from sidewalk on the southern side of Oak Park Boulevard looking north toward the plan area

This viewpoint is located south of Oak Park Boulevard on the sidewalk, shown in Exhibit 3.1-5, photograph G (daytime) and photograph H (nighttime). Existing views of the plan area are partially obstructed by trees; however, the plan area is entirely visible, as well as lighting from the Pleasant Hill Middle School, beyond the plan area boundary. This view is primarily composed of Oak Park Boulevard and the southern portion of the plan area.

FIRSTCARBON SOLUTIONS™

Plan Area

Exhibit 3.1-1
Viewpoint Location Map

THIS PAGE INTENTIONALLY LEFT BLANK

A. View 1 Existing Daytime - View from east of EBMUD Trail looking west toward the plan area.

B. View 1 Existing Nighttime - View from east of EBMUD Trail looking west toward the plan area.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-2
Existing Daytime and Nighttime View 1

THIS PAGE INTENTIONALLY LEFT BLANK

C. View 2 - Existing Daytime - View from Pleasant Hill Instructional Garden north of Hawthorne Drive looking southeast toward the plan area.

D. View 2 - Existing Nighttime - View from Pleasant Hill Instructional Garden north of Hawthorne Drive looking southeast toward the plan area.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-3
Existing Daytime and Nighttime View 2

THIS PAGE INTENTIONALLY LEFT BLANK

E. View 3 - Existing Daytime - View from Pleasant Hill Library west of Monticello Avenue looking northeast across the plan area.

F. View 3 - Existing Nighttime - View from Pleasant Hill Library west of Monticello Avenue looking northeast across the plan area.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-4
Existing Daytime and Nighttime View 3

THIS PAGE INTENTIONALLY LEFT BLANK

G. View 4 - Existing Daytime - View from sidewalk on the southern side of Oak Park Boulevard looking north toward the plan area.

H. View 4 - Existing Nighttime - View from sidewalk on the southern side of Oak Park Boulevard looking north toward the plan area.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-5
Existing Daytime and Nighttime View 4

THIS PAGE INTENTIONALLY LEFT BLANK

Light and Glare

In the context of CEQA Guidelines, light is nighttime illumination that stimulates sight and makes things visible; glare is difficulty seeing in the presence of bright light such as direct or reflected sunlight.

Plan Area Vicinity

The primary sources of nighttime light in the surrounding area are from vehicle headlights traveling along Oak Park Boulevard and Monticello Avenue as well as exterior lighting associated with the Pleasant Hill Middle School and Pleasant Oaks Park. Streetlights and residential and commercial buildings with outdoor security lighting exist to the west and south of the plan area.

Large reflective surfaces associated with buildings in the plan area contribute daytime glare within the plan area.

Plan Area

The existing library and vacant administrative office buildings contain glass windows and exterior lighting lines the parking area. Monticello Avenue and Oak Park Boulevard contains streetlights, but no other portions of the plan area currently contain lighting.

3.1.3 - Regulatory Framework

Federal

No federal plans, policies, regulations, or laws related to aesthetics are applicable.

State

California Scenic Highway Program

The State Legislature created the California Scenic Highway Program, maintained by Caltrans, in 1963. The purpose of the State Scenic Highway Program is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been officially designated. The status of a proposed State Scenic Highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway.

Title 24 of the California Code of Regulations Building Energy Efficiency Standards

California Building Code (California Code of Regulations [CCR], Title 24)—including Title 24, Part 6—includes Section 132 of the Building Energy Efficiency Standards, which regulates lighting characteristics, such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set by classifying areas by lighting zone. The

classification is based on population figures of the 2000 Census. Areas can be designated as LZ1 (dark), LZ2 (rural), or LZ3 (urban). Lighting requirements for dark and rural areas are stricter in order to protect the areas from new sources of light pollution and light trespass. The majority of the City of Pleasant Hill falls under the "urban" standard.

Local

Pleasant Hill 2003 General Plan

Community Development Element

The Pleasant Hill 2003 General Plan Community Development Element establishes the following goals, policies, and programs related to aesthetics:

Community Development Element Policies, Programs, and Goals

- **Policy 1A:** Encourage aesthetic enhancement of residential areas, while retaining the charm and character of individual neighborhoods.
- **Program 2.5:** Allow intensification of commercial land use only when such a change can be reasonably expected by the City Council to result in (a) effective mitigation of environmental constraints, noise, traffic, and other hazards; (b) excellence of design; (c) compatibility with adjacent development; and (d) at least one of the following: provision of affordable housing pursuant to the policies in the City's Housing Element; the provision of parkland, trails, or other community recreation facilities consistent with Community Development Goals 17, 18, and 19.
- **Goal 3:** Generate thriving, attractive and cohesive development at vacant or underutilized sites.
- **Policy 3B:** Require new development to adhere to high standards of quality in design.
- **Goal 4:** Promote a City image that reflects the community's diversity and high quality of life.
- **Policy 4B:** Maintain the suburban town atmosphere of Pleasant Hill.
- **Policy 4C:** Promote periodic clean-up of commercial areas and neighborhoods.
- **Program 4.1:** In efforts to define the City's image, emphasize:
  - The high quality, intergenerational park facilities and recreational opportunities in the city.
  - The community's dedication to education, including the presence of Diablo Valley College and its potential to provide cultural and lifelong learning opportunities.
  - The vital, progressive nature of the city as a suburban residential community and a supportive environment for business.
- **Program 5.1:** Install streetscape features in the public right-of-way that call attention to consistent design themes and promote pedestrian friendliness.
- **Goal 7:** Establish clear and attractive gateways that define Pleasant Hill.
- **Goal 7A:** Enhance key intersections and entries to the City with signs, art and streetscape features.
- **Goal 8:** Install aesthetic improvements in public spaces.
- **Policy 8A:** Provide public art and other amenities in key locations.
- **Program 8.1:** Require installation of public art, landscaping, and/or other public amenities in conjunction with all new public and private development and major rehabilitation or expansion of existing development.
- **Program 8.2:** Explore in-lieu options for public art requirements, such as paying funds or setting aside space for future installation for projects below a certain size.

- **Program 8.3:** Promote funding for public space improvements in the City's biannual Capital Improvements Plan.
- **Goal 9:** Maintain and enhance scenic routes and corridors in the City.
- **Policy 9A:** Protect and enhance the views from and visual qualities of scenic routes and corridors in Pleasant Hill.
- **Program 9.1:** Enforce a minimum 50-foot setback from the right-of-way for scenic routes, in which only compatible features may be allowed, including appropriate landscaping and pedestrian and bicycle routes.
- **Program 9.2:** Amend the Zoning Ordinance to require minimization of visual impacts from structures adjacent to scenic routes.
- **Program 9.3:** Prepare landscaping plans for scenic routes and corridors, including through cooperation with the Recreation and Park District.

Pleasant Hill Municipal Code

Chapter 18.115—Architectural Review

Pursuant to Zoning Ordinance Chapter 18.115, an architectural review permit is required before the issuance of building permits for each building elevation, landscape plan and site plan related to:

- Any project other than a single-family residence or,
- A single-family residence at the time of initial construction, but not for remodeling, additions, or accessory structures; however, staff level review of such structures for substantial conformance with the city-wide design guidelines shall occur as part of the building permit plan review and approval process.

The purpose of the architectural review process is to evaluate the interdependence of property values and aesthetics and to provide a method to promote sound land use development. In order to approve an architectural review permit, the architectural review commission reviews the site plan and physical design of a project; sign designs and locations; and lighting. In addition, the review permit is intended to:

- Ensure excellence of architectural design;
- Ensure that siting and architectural design of structures, including their materials and colors, are visually harmonious with surrounding development and with the natural landforms and vegetation of the areas in which they are proposed to be located;
- Ensure that plans for the landscaping of open spaces conform with the requirements of this chapter and that they provide visually pleasing settings for structures on the site and on adjoining and nearby sites, and blend harmoniously with the natural landscape;
- Prevent excessive and unsightly grading of hillsides, and preserve natural landforms and existing vegetation; and
- Ensure compliance with city-wide design guidelines. (Ord. 856 § 2 (Exh. A), 2011; Ord. 738 § 1 (Exh. C), 1999; Ord. 710 § 35-32.1, 1996; 1991 code § 35-32.1).

Chapter 18.52—Water Efficient Landscaping

This chapter ensures the requirements of the State Water Conservation in Landscaping Act (Government Code §§ 65591 through 65599) are implemented.[2] This chapter would require all projects to submit a water-efficient landscape plan and have the plan approved prior to construction. The water-efficient landscape plan would include calculations of the maximum applied water allowance and estimated total water use. In addition, the water-efficient landscape plan would include required elements of plant materials, irrigation system design, water features, and grading and soil preparation.

Section 18.55.140—Parking Area Screening, Lighting, and Landscaping

Pursuant to Section 18.55.140, the City requires certain screening, lighting, and landscaping features for parking areas.

A. **Screening.** A parking area for five or more cars serving a nonresidential use shall be screened from an adjoining R district or a ground-floor residential use by a solid concrete, solid wood, or masonry wall eight feet in height, constructed to withstand a 15-pound-per-square-foot wind load, except that the height of a wall adjoining a required front yard in an R district shall not exceed three feet. A carport or open parking area for five or more cars serving a residential use shall be screened from an adjoining lot in an R district or a ground-floor residential use by a solid wall or fence six feet in height, except that the height of a wall or fence adjoining a required front yard in an R district shall not exceed three feet.
B. **Lighting.** Outdoor parking lot lighting shall be designed, installed and maintained to prevent nighttime sky light pollution and use energy efficiently by lighting only those areas or objects necessary for safety and security. All outdoor parking lot lighting shall conform to the following:
    1. Exterior light fixtures shall be full cutoff fixtures designed and installed so that no emitted light will break a horizontal plane passing through the lowest point of the fixture.
    2. Outdoor parking area lighting shall not employ a light source mounted higher than 24 feet above finished grade.
    3. Outdoor parking area lighting shall be directed downward and shall not directly shine onto any adjacent street or property. Maximum illumination adjacent to any residential property line or R district boundary line shall not exceed 0.2 foot-candles as measured in the vertical plane at the property line to a height equal to the height of the light source.
    4. The maximum light intensity on a nonresidential site, except automobile, vehicle/equipment sales lots and automobile service stations, shall not exceed 10 foot-candles, when measured at finished grade.
    5. Outdoor parking lot lighting for nonresidential uses shall be completely turned off or light levels dimmed to half, when the associated use is closed (post-curfew), of when the business is open (pre-curfew). If safety and security lighting is warranted, an occupancy sensing system will bring the system to sufficient brightness to meet the need, then reset to the lower level after a predetermined time. This approach is subject to approval by the zoning administrator.

[2] California Legislative Information. 2007. Government Code, Title 7. Planning and Land Use. Website: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV&sectionNum=65591. Accessed: March 5, 2019.

Section 18.60.050—Specific Sign Standards

B. **Illumination—Movement.** The following regulations apply to a sign which is illuminated or which moves.
   1. No sign may have exposed fluorescent tubes or incandescent bulbs unless determined by the decision-making authority to be an enhancement to the design of the sign and complementary to the architecture of a building facade.
   2. If a sign is indirectly illuminated, the lighting shall be white or amber colored.
   3. A sign directly visible from an R district shall not be illuminated between 10:00 p.m. and 6:00 a.m., except during the hours the business is open.
   4. No movement or apparent movement of, or in, a sign or change in intensity of sign illumination is permitted, except as permitted in this section.
      a. Time or temperature signs are permitted, if otherwise consistent with the other provisions of this chapter.
      b. Theater canopy signs are permitted, if otherwise consistent with the other provisions of this chapter.
      c. Electronic readerboard signs located inside a building and within three feet of a window are permitted if the total aggregate area of all electronic readerboard signs at any business location does not exceed two square feet.
   5. A sign with a plastic face shall be constructed of rigid plastic material and constructed in a manner which presents a planar surface with no visible warpage of the sign face and no visible seams. If a sign with a plastic face is illuminated, the illumination shall be evenly distributed and not cause uneven shadows.
   6. An exposed neon window sign (without a translucent cover over the neon) is permitted if it otherwise complies with the regulations of this chapter and does not exceed four square feet per window.

Pleasant Hill City Wide Design Guidelines

Residential

The Residential Design Guidelines are intended to inspire thoughtful interpretation and response to design opportunities, while promoting and reinforcing the physical image of residential and commercial areas of the City of Pleasant Hill. The guidelines are intended to encourage quality and well-designed development throughout the City that enhances existing neighborhoods, creates identity, and improves the overall quality of life within the City.

Non-residential

The City's Non-residential Design Guidelines are intended to provide for quality and well-designed development throughout Pleasant Hill. They are not intended to replace or establish new requirements for the Zoning Ordinance, the General Plan, or public works standards.

Oak Park Properties Specific Plan Development Standards

The Oak Park Properties Specific Plan Development Standards (Specific Plan Development Standards) contain design guidelines for the park, library, and residences, which are described in more detail below.

Park Development Standards

The Specific Plan Development Standards outline development standards specific to the proposed park's land uses as outlined in Table 3.1-2.[3]

Table 3.1-2: Development Standards, Proposed Park

Development Feature	Requirement
Minimum Setbacks	
From Creek	10 feet[1]
From Parking Lot	20 feet
From Monticello Avenue	20 feet
From Northern Property Line	20 feet
Height Limitations	
For Light Fixtures	70 feet
For Park Structures	25 feet
For Park Buildings	20 feet
For Flagpoles	25 feet
Maximum Number of Building Stories	2.5 stories
Minimum Site Landscaping	5 percent[2]
Maximum Gross Floor Area Ratio	1,500 square feet
Parking	Determined by Use Permit[3]

Notes:
[1] Measured from the top of Grayson Creek bank
[2] This does not include the actual playing fields that are excluded from this calculation.
[3] Parking spaces to be shared with the proposed library (as part of Civic Project). Non City-shared parking facilities shall comply with the Pleasant Hill Zoning Ordinance provisions (electric vehicle parking shall not be required).
Source: Oak Park Properties Specific Plan 2019.

The Specific Plan Development Standards also include a suggested plant material list, which include, but are not limited to:

Trees

- Arbutus 'Marina' (*Arbutus*)
- Coast Silktassel (*Garrya elliptica*)
- Coast Live Oak (*Quercus agrifolia*)
- Cork Oak (*Quercus suber*)
- Southern Live Oak (*Quercus virginiana*)
- Silver Linden (*Tilia tomentosa*)

[3] Proposed park hours are from sunrise until 10:00 p.m. (if activities are scheduled). The sports fields would be used Monday through Friday after school until 10:00 p.m. and on Saturdays and Sundays from 8:00 a.m. to 10:00 p.m.

Shrubs

- Yankee Point Ceanothus (*Ceanothus griseus*)
- Little Olive 'Montra' (*Olea europaea*)
- California Coffeeberry 'Eve Case' (*Rhamnus californica*)
- Common Yarrow (*Achillea millefolium*)
- Blue Grama 'Blonde Ambition' (*Bouteloua gracilis*)
- Berkeley Sedge (*Carex divulsa*)
- Coneflower 'Flamethrower' (*Echinacea*)
- Molate Fescue (*Festuca rubra*)
- Melic (*Melica ciliata*)
- Sticky Monkey Flower (*Mimulus aurantiacus*)
- Sour Grapes Beard Tongue 'Sour Grapes' (*Penstemon*)
- Hummingbird Sage (*Salvia spathacea*)

Groundcovers

- Bermuda Grass 'Tifway 419' (*Bermuda*)

Library Development Standards

The Specific Plan Development Standards outline development standards specific to the proposed library's land uses as outlined in Table 3.1-3.

Table 3.1-3: Development Standards, Proposed Library

Development Feature	Requirement
Minimum Lot Area	2.5 acres
Minimum Lot Width	200 feet
Minimum Setbacks	
From Creek	40 feet[1]
From Parking Lot	20 feet
From Monticello Avenue	20 feet
From Northern Property Line	20 feet
Height Limitations (Maximum)	
For Street Lights	22 feet
For Main Building	30 feet
For Site Fences and Auxiliary Buildings	14 feet
For Flagpoles	25 feet
Maximum Number of Building Stories	2.5 stories
Minimum Site Landscaping	20 percent
Maximum Floor Area Ratio	0.25
Parking	90 spaces minimum[2]

Table 3.1-3 (cont.): Development Standards, Proposed Library

Development Feature	Requirement
Notes: [1] Measured from the top of Grayson Creek bank [2] Parking spaces to be shared with the adjacent proposed park (as part of Civic Project). Source: Oak Park Properties Specific Plan 2019.	

Residential Development Standards

Table 3.1-4 summarizes the residential development standards as set forth in the Specific Plan Development Standards. The residential development standards include development setbacks, exterior design concepts, and building envelope designs. These standards are also shown in Figure 6.2, Residential Setback Diagram, and Figure 6.3, Parking and Loading Development Standards Diagram in the Specific Plan Development Standards. The letters in Table 3.1-4 correspond to Figure 6.2, and the letters in Table 3.1-5 correspond to Figure 6.3.

Table 3.1-4: Residential Development Standards

Development Feature	Requirement
Minimum Lot Size	3,936 square feet
A. Minimum Width, internal lots	48 feet
B. Minimum width, corner lots	54 feet
C. Minimum width, lots along Monticello Avenue	54 feet
D. Minimum lot depth	82 feet
Minimum Setbacks	Chimneys, fireplaces, accent walls or pilasters, bay window, eaves or similar architectural projection may encroach as per City of Pleasant Hill Zoning Ordinance.
E. Front: to building face or porch	10 feet
F. Front: to front loaded garage door	19 feet (must maintain an 18 feet by 18 feet clear driveway)
G. Side—internal lot	4 feet
H. Side—corner lots: to building face	10 feet
I. Side—corner lots: to porch	7 feet
J. Rear	10 feet
Maximum Height	35 feet (2 stories)
Maximum Lot Coverage	60 percent
Minimum Open Space[1,2]	200 square feet per unit (can be private open space, common open space, or a combination of both consistent with the Pleasant Hill Municipal Code)
Parking	Two covered spaces per unit

Table 3.1-4 (cont.): Residential Development Standards

Development Feature	Requirement
Guest Parking	0.5 per unit (guest spaces may be provided on driveway aprons, on-street parking spaces or in designated parking spaces within the plan area. Driveway space shall be a minimum of 9 feet by 18 feet.
Accessory Dwelling Unit	0 (no additional parking required due to proximity to transit).
Notes: [1] Private open space must be on a patio, private yard area, or on a balcony. The minimum dimensions required to qualify as Private Open space are: Yard: 150 square feet, with a minimum dimension of 10 feet; Porches, decks and balconies: 60 square feet, with a minimum dimension of 6 feet. [2] Common open space must be designed so that a horizontal rectangle has no dimension less than 15 feet and may not include parking areas, or area required for front or side yards. Source: Oak Park Properties Specific Plan 2019.	

Table 3.1-5 summarizes parking and loading standards for residential development.

Table 3.1-5: Parking and Loading Development Standards, Residential

Off-Street Parking Standards	Requirement
A. Parking depth	19 feet (when a parking space abuts a landscaped planter less than 6 inches high, the front 2 feet of the required length for a parking space may extend into the planter.)
B. Parking width	9 feet (parallel spaces shall be 8 feet by 23 feet adjacent to a 10 feet wide travel lane.)
C. Drive Aisles	20 feet
D. Driveway Depth	18 feet
E. Driveway Width	18 feet
Source: Oak Park Properties Specific Plan 2019.	

3.1.4 - Impacts and Mitigation Measures

Significance Criteria

According to 2019 CEQA Guidelines Appendix G, to determine whether impacts related to aesthetics are significant environmental effects, the following questions are analyzed and evaluated. Would the proposed plan:

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 building within a State scenic highway?

c) In a non-urbanized area, substantially degrade the existing visual character or quality of the site and its surroundings? If in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality?

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Approach to Analysis

Scenic Vistas and Resources

This analysis evaluates the potential impacts associated with development of the Civic Project and Residential Project on designated scenic vistas and resources. The City of Pleasant Hill designates several gateways, key streets, scenic corridors, and scenic routes as they afford publicly available views. If the proposed plan would alter or block views of these identified scenic resources, then an impact would occur. Relevant Pleasant Hill 2003 General Plan and Pleasant Hill Municipal Code policies are used to provide conclusions with regard to the significance of the proposed plan and cumulative level impacts.

Caltrans designates highways and roadways throughout the State as eligible or designated State Scenic Highways. If the proposed plan would alter or block views of or from these designated or eligible highways an impact may occur. Relevant State regulations are used to provide conclusions with regard to significance of the proposed plan and cumulative level impacts.

Visual Character and Views

This analysis discusses the visual impacts associated with the development of the Civic Project and Residential Project on the plan area and its surroundings. Several variables affect the degree of visibility, visual contrast, and ultimately project impacts: (1) scale and size of facilities, (2) viewer types and activities, (3) distance and viewing angle, and (4) influences of adjacent scenery or land uses. Viewer response and sensitivity vary depending on viewer attitudes and expectations. Viewer sensitivity is distinguished among viewers in identified scenic corridors and from publicly accessible recreational and plaza areas. Recreational areas and scenic corridors are considered to have relatively high sensitivity.

Light and Glare

The analysis of light and glare impacts in this section focuses on the nature and magnitude of changes in light and glare conditions associated with the development of the Civic Project and Residential Project on the plan area and its surroundings. If the light and glare conditions of the Civic Project and Residential Project and the existing environment are similar, then the visual compatibility would be high. If the light and glare conditions of the Civic Project and Residential Project strongly contrast with the existing light and glare or applicable policies and guidelines, then light and glare compatibility would be low and significant impacts may result. Adopted urban design policies and guidelines are applied to determine the significance of potential cumulative-level light and glare impacts associated with the development of the Civic Project and Residential Project.

An independent consultant has completed a peer review of the lighting plans for the athletic fields, library, and roadway streetlight components (Appendix B). Based on the peer review, the proposed

lighting for the Civic Project has been refined, where needed, to ensure that lighting would not result in trespass onto adjacent properties, in compliance with State and local standards.

The Residential Project would be required to complete photometrics once design details are available to ensure compliance with state and local standards.

Specific Thresholds of Significance

The City of Pleasant Hill has not adopted quantitative thresholds for the evaluation of aesthetics. The City applies the following qualitative thresholds based on adopted policies and guidelines to evaluate the significance of aesthetics impacts resulting from the development of the Civic Project and Residential Project.

- Block existing views from a City-designated scenic routes and corridors toward a City-designated visual/scenic resource (e.g., ridgeline)
- Be inconsistent with the character of the plan area or existing development in the surrounding area or would substantially alter existing natural topography
- Increase existing nighttime light or daytime glare sources in the plan area or vicinity in a manner that would substantially affect nighttime or daytime views

Impact Evaluation

Scenic Vistas

Impact AES-1: The proposed plan would not have a substantial adverse effect on a scenic vista.

Construction

Civic Project and Residential Project

Impacts related to scenic vistas are limited to operational impacts because construction impacts would be temporary and would not result in permanent obstruction to scenic vistas. No respective construction impacts would occur.

Operation

Civic Project and Residential Project

A significant impact would occur if the implementation of the proposed plan results in a substantial adverse effect on a scenic vista[4] as defined and identified in the Pleasant Hill 2003 General Plan. In lieu of identifying scenic vistas, the Pleasant Hill 2003 General Plan identifies gateways, key streets, scenic corridors, and scenic routes as they also afford publicly available views. A scenic corridor or route is defined as having a highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made scenic resources. Scenic corridors and routes direct views to areas of exceptional beauty, natural resources or landmarks, or historic or cultural interest. The Pleasant Hill 2003 General Plan's Community Development Element includes provisions to prohibit development within 50 feet of scenic corridors and routes.

[4] A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public.

In the Pleasant Hill 2003 General Plan, Oak Park Boulevard, which constitutes the southern portion of the plan area, is a protected scenic corridor and provides intermittent views of Mount Diablo for eastbound travelers. The Pleasant Hill 2003 General Plan Community Development Element includes provisions to prohibit development on ridgelines, hillsides, creeks, and rock outcroppings where structures would interrupt the skyline and alteration of slopes greater than 15 percent. There are no ridgelines, hillsides, slopes greater than 15 percent, or rock outcroppings on the project site. However, Grayson Creek does traverse the eastern portion of the plan area. The Pleasant Hill 2003 General Plan states that Oak Park Boulevard is a scenic corridor because it contributes significantly to the overall image of Pleasant Hill. However, the Pleasant Hill 2003 General Plan determined that Oak Park Boulevard is not appropriate for a development setback but merits additional landscaping and other improvements to enhance its visual quality.[5]

Taylor Boulevard and Grayson Road, two roadways designated as scenic routes by the Pleasant Hill 2003 General Plan, are located more than a mile to the west and northwest, respectively. Intervening development and the flat topography of the plan area and its vicinity obstruct existing views of Taylor Boulevard and Grayson Road from the plan area or immediate surrounding area.

With implementation of the proposed plan, views toward Mount Diablo from Oak Park Boulevard would remain, and the implementation of the proposed plan would not affect the existing views from this scenic corridor. Views of Mount Diablo from Monticello Avenue for southbound travelers may be intermittently blocked by the proposed library; however, these views are already obstructed by trees and only the top portion of Mount Diablo is visible. Furthermore, Monticello Avenue is not a designated scenic corridor by the Pleasant Hill 2003 General Plan. Intermittent views would also still be available from the proposed park, depending on the distance to the Grayson Creek riparian corridor and development to the east.

Conclusion

Implementation of the proposed plan would result in the construction of new buildings in the plan area. However, views from Oak Park Boulevard, a City-designated scenic corridor, would remain unchanged. Views from the plan area towards surrounding hillsides or mountains, including Mount Diablo, are currently partially or completely obstructed due to trees and development. The proposed building heights and setbacks for all residential and nonresidential uses covered by the Specific Plan would be consistent with the Specific Plan Development Standards. As such, scenic vistas from gateways, key streets, scenic corridors, and scenic routes would not be obstructed or degraded as a result of the implementation of the proposed plan. Therefore, overall impacts related to scenic vistas would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

[5] City of Pleasant Hill. Pleasant 2003 General Plan, page 15.

Scenic Resources within State Scenic Highways

Impact AES-2: **The proposed plan would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a State scenic highway.**

Construction

Civic Project and Residential Project

Impacts related to scenic resources damage within a State Scenic Highway are limited to operational impacts. No respective construction impacts would occur.

Operation

A significant impact would occur if the implementation of the proposed plan would result in new development that would substantially damage scenic resources as seen from a designated State Scenic Highway.

Civic Project and Residential Project

The plan area is located in the southeastern portion of the City of Pleasant Hill, approximately 0.3 miles west of I-680. This proximate segment of I-680 is neither eligible nor designated as a State Scenic Highway. In addition, the closest designated or eligible State Scenic Highway is the portion of I-680 south of Walnut Creek and State Highway 24, approximately 2.6 miles to the south of the plan area. No officially designated State Scenic Highways traverse the plan area, and no scenic resources (i.e., ridgelines, hillsides, rock outcroppings) are located within the plan area, of which a view would be available from a State Scenic Highway. In addition, the plan area is surrounded by suburban and recreational development. Given the absence of State Scenic Highways proximate to the plan area, the lack of designated scenic resources within the plan area, and the presence of intervening development between the plan area and more distant scenic highways, the implementation of the proposed plan would not adversely affect views of scenic resources from any State Scenic Highway. Thus, no impact would occur due to construction of the Civic Project or Residential Project related to scenic resources within a State Scenic Highway.

Level of Significance

No Impact (Civic Project and Residential Project)

Visual Character and Views

Impact AES-3: **In non-urbanized areas, the proposed plan would not substantially degrade the existing visual character or quality of public views of the site and its surroundings or conflict with applicable zoning and other regulations governing scenic quality.[6]**

Construction

Civic Project and Residential Project

Impacts related to degradation of existing visual character or quality of the plan area and surroundings are limited to operational impacts. No respective construction impacts would occur.

[6] For the purposes of this analysis, the project site is considered a not fully urbanized area. Therefore, out of an abundance of caution, this analysis evaluates publicly accessible views of the site and its surroundings.

Operation

Civic Project and Residential Project

The plan area is not fully urbanized, aside from the existing library and vacant administrative offices. The area surrounding the plan area has a suburban residential character. Multi-family apartments are located to the west (on Monte Cresta Avenue), the EBMUD trail and landscaping is to the east (adjacent to the eastern boundary of the plan area), single-family homes are located to the south (along Oak Park Boulevard), and Pleasant Oaks Park and Pleasant Hill Middle School are to the North.

Consistency with Scenic Quality Regulations

Consistency with Pleasant Hill 2003 General Plan

Implementation of the Civic Project would involve construction of a new library and park, as well as improvements to roadways and storm drainage systems, modifying outfalls and related improvements to the Grayson Creek Corridor. The Civic Project would be consistent with Community Development Goal 3 because it would result in the development of a new library and athletic fields, and would connect to existing pedestrian and bike paths that would create a cohesive development of a vacant and underutilized site. The implementation of the Civic Project would enhance Oak Park Boulevard by providing new sidewalks, landscaping, and re-striping consistent with Community Development Goal 9. In addition, views along Oak Park Boulevard would change, consistent with Community Development Policy 9A.

Implementation of the Residential Project would involve construction of 34 single-family residences and seven accessory dwelling units. The Residential Project would be consistent with Community Development Policy 1A because the single-family residential homes would enhance the aesthetic of the plan area by including homes with a cottage, Spanish, craftsman, and farmhouse design that would match the surrounding residential areas to the south and east.

Consistency with Pleasant Hill Municipal Code

Consistent with Chapter 18.115 of the Pleasant Hill Municipal Code, the Civic Project and Residential Project would each be required to obtain an architectural review permit prior to issuance of building permits. The architectural review permit would ensure the architectural design of the Residential Project's residences and the Civic Project's library and park development, including materials and colors, are visually harmonious with surrounding development. In addition, the architectural review permit would ensure that landscaping plans for both the Civic Project and Residential Project conform to the requirements of this chapter and provide visually pleasing settings for structures within the plan area and blends with the natural landscape. Furthermore, compliance with the architectural review permit would ensure compliance with Pleasant Hill City Wide Design Guidelines as well as the Specific Plan Development Standards. Parking areas associated with the Residential Project would be screened with a solid wood fence with horizontal slats consistent with Section 18.55.140. All outdoor lighting associated with the Civic Project and Residential Project would be directed downward.

Consistency with Pleasant Hill City Wide Design Guidelines

As discussed above, the Civic Project and Residential Project would be subject to an architectural review permit that would ensure design, including landscaping, would conform to the Pleasant Hill City Wide Design Guidelines. The Civic Project would include pedestrian and bike paths as well as open space and recreational areas to encourage pedestrian activity and create a visual link to streets and sidewalks.

Consistency with Oak Park Properties Specific Plan Development Standards

As part of the approval process, the Residential Project and Civic Project would be required to submit and adhere to the Specific Plan Development Standards that provide specific guidance with respect to project design. The Residential Project and Civic Project would also be subject to the Specific Plan's landscaping guidelines that include plant species, size, and types of irrigation to ensure the Residential Project and Civic Project are consistent with the Pleasant Hill City Wide Guidelines related to water conserving methods.

Visual Character and Quality of Public Views

Views to and from the Civic Project Site

The Civic Project would include modern architecture, multi-use trails along the perimeter, and maintained landscaping that would improve the overall appearance of this currently vacant lot. New trees would complement the existing riparian vegetation along Grayson Creek. Native or climate appropriate buffer planting would also be planted along all street fronts and throughout the area abutting the Grayson Creek Corridor. As described in Section 3.3, Biological Resources, the Civic Project would be required to adhere to the Pleasant Hill Municipal Code Section 18.50.110, which requires the acquisition of tree permits prior to the removal of protected trees (per Mitigation Measure [MM] BIO-5a). Remaining trees that are proposed for preservation on the Civic Project site would be protected through the implementation of the pre-, during, and post-construction tree protection guidelines identified and outlined in the arborist report (per MM BIO-5b through MM BIO-5d).

The proposed athletic fields and multi-use trails would improve the visual appearance of the Civic Project site by providing new maintained landscaping, a pedestrian trail along Grayson Creek, and a public park area with open space and recreation areas. These uses would be compatible with the visual character of the surrounding land uses, because this site is surrounded by other park and recreational uses including Pleasant Oaks Park adjacent to the northwest, the EBMUD trail adjacent to the east, and Pleasant Hill Middle School Field directly adjacent to the north.

Existing mature native or climate-adapted trees within the top of bank setback would be reviewed by an arborist for health and would be preserved, where possible. As such, these improvements to the Grayson Creek Corridor would be compatible with the visual character of the surrounding land uses by incorporating native landscaping, removing non-native and dead vegetation, and removing trash.

The Monticello Avenue improvements would include road resurfacing, restriping, new sidewalks, lights, and landscaping. The implementation of the proposed plan would include the planting of a minimum of 70 trees along Monticello Avenue within the plan area. Trees would be drought tolerant and a groundcover planting of native and/or climate-adapted planting would separate the sidewalk from the street. The proposed improvements to Oak Park Boulevard include the planting of new street trees and a groundcover planting of native and/or climate-adapted planting separating the sidewalk from the street.

Impacts related to visual quality and character of public views to and from the Civic Project site would be less than significant, as the implementation of the Civic Project would not substantially degrade the existing suburban character of the surrounding area or substantially alter existing views of distant mountains and hillsides.

Views to and from the Residential Project

The Residential Project would replace the existing library uses with residential uses that would be composed of four distinct architectural styles consisting of Spanish, farmhouse, craftsman, and cottage styles. Units would employ architectural features such as painted wood columns, accent corbels, enhanced windowsills, and shingle or tile roofing. The homes would have a variety of floor plans and would have an architectural palette that builds on the rich history and distinct character of the City of Pleasant Hill. The residential units would provide visual interest and would contribute to the overall neighborhood identity. The buildings on this property would be below the maximum of 35 feet in height, in accordance with the Pleasant Hill Municipal Code.

Impacts related to visual quality and character of public views to and from the Residential Project site would be less than significant, as the Residential Project design would be consistent with the existing suburban character of the surrounding area and would not substantially alter existing views.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Light and Glare

Impact AES-4:	**The proposed plan would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.**

Construction

Civic Project and Residential Project

Impacts related to creation of a new source of light and glare that could affect day or nighttime views in the plan area are limited to operational impacts. Construction period impacts would be temporary and construction activities are limited to daytime hours. No respective construction impacts would occur.

Operational Light and Glare

Implementation of the Civic Project and Residential Project would have a significant impact if substantial light or glare would adversely affect nighttime or daytime views, respectively, within the vicinity of the plan area. The development of residential, civic, and recreational uses with associated windows as well as exterior lighting and signage would create an increase of nighttime light and daytime glare, due to the increase of lighting and reflective surfaces and vehicle headlights in the area. Potential sources of light associated with the Civic Project and Residential Project are discussed below.

Civic Project

Light

The proposed athletic fields would be lighted by poles approximately 40 to 70 feet tall with a light level less than 50,000 candela, which is equivalent to high beam headlights of a car.[7] Light from these lighting poles could extend across Grayson Creek Corridor and onto the off-site EBMUD Trail and single-family homes to the east. However, Exhibit 3.1-6, photograph A, shows that these lights would be directed downward and toward the west, away from the EBMUD trail and adjacent single-family homes. The photometric plan for the proposed athletic fields was peer reviewed by an independent

[7] Musco Lighting. 2018. Illumination Summary.

consultant, and adjustments were identified and implemented in the proposed design and operation (i.e. 10 p.m. but off) to ensure that lighting levels would not exceed City lighting standards.

In addition, Exhibit 3.1-6, photograph A, demonstrates that the only lighting proposed adjacent to the EBMUD trail and single-family homes would be minor landscape lighting that would only intermittently illuminate the trail and newly planted trees. Furthermore, the proposed lighting would need to comply with the Pleasant Hill Municipal Code, including Section 18.55.140, which provides standards for parking lot lighting, and Section 18.60.050, which provides standards for signs.

The proposed athletic fields would not include reflective materials that would introduce significant sources of glare. The athletic fields and bocce courts would be constructed from concrete, and no glass or solar panels would be included.

The proposed library would include exterior lighting that would create a new source of light compared to existing conditions (Exhibit 3.1-7, photograph D). As shown in Exhibit 3.1-7 photograph D, the only lights visible from Oak Park Boulevard would be directed onto the library's southern façade, sidewalks, and in the parking lot. This property is currently adjacent to Oak Park Boulevard and residential homes across Oak Park Boulevard to the south, which contains light sources that illuminate the southern portion of the Civic Project property. Pursuant to Section 18.55.140 of the Municipal Code, the City requires certain screening, lighting, and landscaping features for parking areas. The proposed library parking lot would include lighting that would be required to limit off-site light spillage and would screen lighting with landscaping. As shown in Exhibit 3.1-7, photograph D, the parking lot would be screened by the library and associated trees and lighting would not spill onto the adjacent single-family homes. The photometric plan for the proposed library was peer reviewed by an independent consultant, and adjustments were identified and implemented in the proposed design to ensure that lighting levels demonstrate that the library lighting would not exceed City lighting standards. In addition, the Civic Project would adhere to Section 18.60.050 of the Pleasant Hill Municipal Code, which provides standards for signs. No signage is proposed along the pedestrian trail along Grayson Creek Corridor or the potential future bridge connecting the pedestrian trail to the EBMUD trail. Lighting would be provided along the pedestrian trail immediately west of the Grayson Creek Corridor and would be shut off at 10:00 p.m.

The proposed library would include building materials composed of glass, metals, and concrete that would create a new source of glare compared to existing conditions. Consistency with the Specific Plan Development Standards would ensure the library would not produce a significant source of glare. In addition, proposed landscaping and existing trees would partially screen the library from view on Oak Park Boulevard and Monticello Avenue, further reducing potential glare impacts.

As shown in Exhibit 3.1-7, photograph C, Monticello Avenue Improvements would include 20 new streetlights along the east and west sides of Monticello Avenue. Ten new streetlights would line each side of Monticello Avenue, starting at the intersection with Santa Barbara Road. The new clear seeded acrylic lens lighting fixtures would consist of 17-foot fluted structural grade aluminum poles with a 3-foot aluminum lighting roof and cage. The 5-inch diameter poles would rest atop 4-foot straight-base shafts, anchored to the pavement. The lighting system would draw 94 watts through a mounted light emitting diode (LED) source to provide 4,670 lumens. The new lighting poles would be located behind

the sidewalk within public utility easements or within landscape areas. As seen in Exhibit 3.1-7, photograph C, the lighting would be directed downward and limited to the Civic Project site. The photometric plan was peer reviewed by an independent consultant, and adjustments were identified and implemented in the proposed design to ensure that lighting levels would not exceed City lighting standards. These improvements would not include highly reflective materials, such as glass. Additionally, any reflective roadway improvements would be intended for roadway safety.

Oak Park Boulevard improvements would include 10 new streetlights along the northern segment of Oak Park Boulevard. As shown in Exhibit 3.1-7, photograph D, the only lights visible from Oak Park Boulevard would be directed onto the library's southern façade, sidewalks, and in the parking lot. As described above, the new lighting fixtures would consist of 17-foot fluted structural grade aluminum poles with a 3-foot aluminum lighting roof and cage. The lighting system would draw 94 watts through a mounted LED source to provide 4,670 lumens.

The Oak Park Boulevard segment within the plan area is adjacent to residential homes, which contain light sources that illuminate the southern portion of the Civic Project site. As shown in Exhibit 3.1-7, photograph D, lighting would be screened by the proposed library and associated trees. The photometric plan was peer reviewed by an independent consultant, and adjustments were identified and implemented in the proposed design to ensure that lighting levels would not exceed City lighting standards. As a result, lighting would not spill onto the adjacent single-family homes. These improvements would not include highly reflective materials, such as glass. Additionally, any reflective roadway improvements would be intended for roadway safety.

The Civic Project site and its surrounding area are dominated by urban development, which are less sensitive to changes in light levels. As shown in Exhibit 3.1-5, Exhibit 3.1-6, and Exhibit 3.1-7, the Civic Project's proposed nighttime lighting would not spill off-site or significantly change the light setting in the area. The photometrics of the Civic Project components have been peer reviewed by an independent consultant who suggested refinements that were incorporated into the proposed selection of fixtures to ensure that the proposed library, athletic fields, and streetlights would comply with City lighting standards. Additionally, the Civic Project would comply with Section 18.55.140 and Section 18.60.050 of the Pleasant Hill Municipal Code, which requires certain screening, lighting, and landscaping features for parking areas. As such, all exterior lighting fixtures and lighted signage would be installed, controlled, screened, or directed so that light would not spill onto adjoining properties or be blinding to pedestrians or vehicular traffic. Therefore, the Civic Project's uses would be compatible with the surrounding uses and lighting impacts would be less than significant.

Glare

Project development would result in new sources of glare from buildings and light poles that would introduce new sources of glare in the form of reflective glass and metal elements. As such, daytime glare impacts would be potentially significant. However, implementation of MM AES-4 would require adherence to a design review process and standards to minimize the Civic Project's daytime glare contribution. Therefore, glare impacts would be less than significant with mitigation.

A. View 1 Proposed - View from east of EBMUD Trail looking west toward the plan area.

B. View 2 Proposed - View from Pleasant Hill Instructional Garden north of Hawthorne Drive looking southeast toward the plan area.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-6
Proposed Nighttime Views 1 and 2

THIS PAGE INTENTIONALLY LEFT BLANK

C. View 3 Proposed - View from Pleasant Hill Library west of Monticello Avenue looking northeast across the plan area.

D. View 4 Proposed - View from sidewalk on the southern side of Oak Park Boulevard looking north toward the plan area.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-7
Proposed Nighttime Views 3 and 4

THIS PAGE INTENTIONALLY LEFT BLANK

Residential Project

As shown in shown in Exhibit 3.1-6, photograph B, the Residential Project would introduce new sources of nighttime lighting, including lighting from the residential units. However, given the intervening foliage and buildings, the Residential Project would not be visible from this viewpoint. Residential exterior lighting would be located around and within the site. Lampposts would be evenly dispersed, with safety lighting, as needed throughout the site. The Residential Project would need to comply with Section 18.55.140, which provides standards for parking lot lighting, and Section 18.60.050, which provides standards for signs, of the Pleasant Hill Municipal Code.

Potential sources of glare associated with the Residential Project would consist of glazing (windows) and other reflective materials used in the façades of proposed structures. The proposed residential units that would be composed of four distinct architectural styles consisting of Spanish, farmhouse, craftsman, and cottage styles. Besides windows, most of the exterior building materials of the proposed residences would not consist of glass, metal, or other reflective materials.

As discussed previously, the Residential Project would result in residential homes with similar light and glare impacts typical of single-family homes, such as exterior landscape lighting and windows. There are single-family homes located just south and, as a result, the area around this site is already affected by similar light and glare impacts. In addition, implementation of MM AES-4 would require adherence to a design review process and standards to minimize the Residential Project's daytime glare contribution. Therefore, impacts related to light and glare associated with the Residential Project would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

MM AES-4 Adhere to Architectural Design Review Process and Standards

Civic Project and Residential Project: As part of the City's review process, the Civic Project and Residential Project shall each include the following features in its design review submittal:

- Structures facing a public street or neighboring property shall use minimally reflective glass, and other materials and colors used on the exterior of buildings and structures shall be selected with attention to minimizing reflective glare.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

3.1.5 - Cumulative Impacts

The geographic scope of the cumulative aesthetics analysis is the visible area surrounding the plan area. The analysis considers the foreseeable development projects listed in Table 3-1 (See Chapter 3, Environmental Impact Analysis) in the City of Pleasant Hill area in addition to the proposed plan.

Visual Character and Views

Within the vicinity of the plan area, there is a mix of mostly residential, commercial, and recreational developments. The proposed plan and the other cumulative projects listed in Table 3-1 propose suburban development, but only Cumulative Project 3 (daycare facility) would be located within the same visible area. The proposed plan and Cumulative Project 3 would contribute to the continued urbanization of the City of Pleasant Hill, consistent with the vision for buildout expressed by the Pleasant Hill 2003 General Plan.

The proposed plan and Cumulative Project 3 would be subject to the same Pleasant Hill 2003 General Plan policies, Pleasant Hill Municipal Plan codes, and Pleasant Hill City Wide Design Guidelines related to building heights, setbacks, architecture, undergrounding of utilities, parking areas, landscaping, signage, and permitted land uses. As such, the cumulative impact related to visual character and quality of public views within the vicinity of the plan area would be less than significant.

Light and Glare

Within the vicinity of the plan area, there is a mix of mostly residential, commercial, and recreational developments. The proposed plan and the other cumulative projects listed in Table 3-1 propose suburban development, but only Cumulative Project 3 (daycare facility) would be located within the same visible area. The proposed plan and Cumulative Project 3 would include exterior and interior lighting. Lighting associated with the proposed plan and Cumulative Project 3 would be subject to Pleasant Hill Municipal Code Chapter 18.60.050, which establishes standards for illuminated signs. As such, the cumulative impact related to light and glare would be less than significant.

Level of Cumulative Significance

Less Than Significant (Civic Project and Residential Project)

3.2 - Air Quality

3.2.1 - Introduction

This section describes existing air quality conditions regionally, locally, and within the Specific Plan area (plan area) as well as the relevant regulatory framework. This section also evaluates the possible impacts related to air quality that could result from implementation of the Specific Plan (proposed plan). Information included in this section is based on proposed plan-specific air quality modeling outputs included in Appendix C. The following comments were received during the Environmental Impact Report (EIR) scoping period related to air quality:

- Concerned with time period between demolition of the existing library and construction of the proposed new library; and
- Concerned with construction schedule.

3.2.2 - Environmental Setting

Regional Geography and Climate

The City of Pleasant Hill is located in Contra Costa County and within the San Francisco Bay Area Air Basin (Air Basin or SFBAAB). The Air Basin is approximately 5,600 square miles in area and consists of nine counties that surround the San Francisco Bay, including all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties; the southwestern portion of Solano County; and the southern portion of Sonoma County. The San Francisco Bay Area (Bay Area) has a Mediterranean climate characterized by mild, dry summers and mild, moderately wet winters; moderate daytime onshore breezes, and moderate humidity.

A semi-permanent, high-pressure area centered over the northeastern Pacific Ocean dominates the summer climate of the West Coast. Because this high-pressure cell is persistent, storms rarely affect the California coast during the summer. Thus, the conditions that persist along the coast of California during summer are a northwest airflow and negligible precipitation. A thermal low-pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the Bay Area much of the summer.

The steady northwesterly flow around the eastern edge of the Pacific High (a high-pressure cell) exerts stress on the ocean surface along the west coast. This induces upwelling of cold water from below. Upwelling produces a band of cold water off San Francisco that is approximately 80 miles wide. During July, the surface waters off San Francisco are 3 degrees Fahrenheit (°F) cooler than those off Vancouver, British Columbia, more than 900 miles to the north. Air approaching the California coast, already cool and moisture-laden from its long trajectory over the Pacific, is further cooled as it flows across this cold bank of water near the coast, thus accentuating the temperature contrast across the coastline. This cooling is often sufficient to produce condensation—a high incidence of fog and stratus clouds along the northern California coast in summer.

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the gap in the western Coast Ranges, known as the Golden Gate, and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds

accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate[1] produces a jet that sweeps eastward but widens downstream, producing southwest winds at Berkeley and northwest winds at San José; a branch curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Golden Gate, the Carquinez Strait, or San Bruno Gap. For example, the average wind speed at San Francisco International Airport from 3 a.m. to 4 p.m. in July is about 20 miles per hour (mph), compared with only about 8 mph at San José and less than 7 mph at the Farallon Islands.

The sea breeze between the coast and the Central Valley[2] commences near the surface along the coast in late morning or early afternoon; it may first be observed only through the Golden Gate. Later in the day, the layer deepens and intensifies while spreading inland. As the breeze intensifies and deepens, it flows over the lower hills farther south along the peninsula. This process frequently can be observed as a bank of stratus clouds "rolling over" the coastal hills on the west side of the bay. The depth of the sea breeze depends in large part upon the height and strength of the inversion. The generally low elevation of this stable layer of air prevents marine air from flowing over the coastal hills. It is unusual for the summer sea breeze to flow over terrain exceeding 2,000 feet in elevation.

In winter, the SFBAAB experiences periods of storminess, moderate-to-strong winds, and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon, and otherwise light and variable winds.

A primary factor in air quality is the mixing depth (the vertical air column available for dilution of contaminant sources). Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This is caused by most of the sun's energy being converted to sensible heat at the ground, which in turn warms the air at the surface. The warm air rises in the atmosphere, where it expands and cools. Sometimes, however, the temperature of air actually increases with height. This condition is known as temperature inversion, because the temperature profile of the atmosphere is "inverted" from its usual state. Over the SFBAAB, the frequent occurrence of temperature inversions limits mixing depth and, consequently, limits the availability of air for dilution.

Air Pollutant Types, Sources, and Effects

Criteria Air Pollutants

Concentrations of criteria air pollutants are used as indicators of air quality conditions. Air pollutants are termed criteria air pollutants if they are regulated by developing specific public health and welfare-based criteria as the basis for setting permissible levels. According to the United States Environmental Protection Agency (EPA), criteria air pollutants are ozone, particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), carbon monoxide (CO), lead, and sulfur dioxide (SO_2). Criteria air pollutants are defined

[1] A strait on the West Coast of North America that connects the San Francisco Bay to the Pacific Ocean.
[2] A flat valley that dominates the geographical center of California stretching 450 miles from north-northwest to south-southeast, inland from and parallel to the Pacific Ocean coast. It is bounded by the Sierra Nevada to the east and the Coast Range to the west.

in more detail under Section 3.2.3, Regulatory Framework. Table 3.2-1 provides a summary of the types, sources, and effects of these criteria air pollutants of national and California concern.

Table 3.2-1: Description of Criteria Air Pollutants of National and California Concern

Criteria Air Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Ozone	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), nitrous oxides (NO_X), and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_X) are mobile sources (on-road and off-road vehicle exhaust).	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.
Particulate matter (PM_{10}) Particulate matter ($PM_{2.5}$)	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (one micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.
Nitrogen dioxide (NO_2)	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related small particles and result in PM related health effects.	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide forms quickly from NO_X emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contributions to atmospheric discoloration; increased visits to hospital for respiratory illnesses.

Table 3.2-1 (cont.): Description of Criteria Air Pollutants of National and California Concern

Criteria Air Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Carbon monoxide (CO)	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.
Sulfur dioxide (SO_2)	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethyl sulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.
Lead	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.

Table 3.2-1 (cont.): Description of Criteria Air Pollutants of National and California Concern

Criteria Air Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Source: South Coast Air Quality Management District (SCAQMD) 2007; California Environmental Protection Agency (Cal/EPA) 2002; California Air Resources Board (ARB) 2009; United States Environmental Protection Agency (EPA) 2003, 2009a, 2009b, 2010, 2011a, and 2012; National Toxicology Program 2011a and 2011b.			

Toxic Air Contaminants

Concentrations of toxic air contaminants (TAC) are also used as indicators of air quality conditions. TACs are defined as air pollutants that may cause or contribute to an increase in mortality or serious illness or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at very low concentrations. TACs can cause long-term health effects (such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage) or short-term acute affects (such as eye watering, respiratory irritation, runny nose, throat pain, or headaches). For those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which some adverse health impacts are not expected to occur. This contrasts with the criteria pollutants such as NO_2 and carbon dioxide (CO_2) for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards.

TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to a particular TAC. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. Cancer risk is typically expressed as excess cancer cases per million exposed individuals, typically over a lifetime exposure or other prolonged duration. For noncarcinogenic substances, there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels may vary depending on the specific pollutant. Acute and chronic exposure to noncarcinogens is expressed as a hazard index (HI), which is the ratio of expected exposure levels to an acceptable reference exposure levels.

To date, the California Air Resources Board (ARB) has designated nearly 200 compounds as TACs. The ARB 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 risk from TACs can be attributed to a relatively few compounds, the most important being diesel particulate matter (DPM) from diesel-fueled engines. Common TACs of national and California concern include: DPM, volatile organic compounds (VOCs), benzene, asbestos, hydrogen sulfide, sulfates, visibility-reducing particulates, vinyl chloride, and lead. Table 3.2-2 provides a summary of these types, sources, and effects of TACs of national and California concern.

Table 3.2-2: Description of Toxic Air Contaminants of National and California Concern

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Diesel Particulate Matter (DPM)	Diesel PM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.	Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.
Volatile Organic Compounds (VOCs)	Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding CO, CO_2, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.	Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.
Benzene	Benzene is a VOC. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The EPA has classified benzene as a "Group A" carcinogen.	Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. Benzene occurs naturally in gasoline at one to two percent by volume. The primary route of human exposure is through inhalation.	Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.

Table 3.2-2 (cont.): Description of Toxic Air Contaminants of National and California Concern

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Asbestos	Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite.	Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States.	Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present.
Hydrogen Sulfide	Hydrogen sulfide is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.
Sulfates	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-} Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.
Visibility-reducing Particles	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture;	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart

Table 3.2-2 (cont.): Description of Toxic Air Contaminants of National and California Concern

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.	disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.
Vinyl Chloride	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, the ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.
Lead	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.

Source: South Coast Air Quality Management District (SCAQMD) 2007; California Environmental Protection Agency (Cal/EPA) 2002; California Air Resources Board (ARB) 2009; United States Environmental Protection Agency (EPA) 2003, 2009a, 2009b, 2010, 2011a, and 2012; National Toxicology Program 2011a and 2011b

Air Quality

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature inversions interact with the physical features of the landscape to determine the movement and dispersal of air pollutant emissions and, consequently, their effect on air quality.

Regional Air Quality

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with jurisdiction for regulating air quality within the nine-county SFBAAB, which includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the western portion of Solano County, and the southern portion of Sonoma County.

Air Pollutant Standards and Attainment Designations

Air pollutant standards have been identified by the EPA and the ARB for the following six criteria air pollutants that affect ambient air quality: ozone, NO_2, CO, (SO_2, lead, and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 microns in diameter (PM_{10}), and PM equal to or less than 2.5 microns in diameter ($PM_{2.5}$). These air pollutants are called "criteria air pollutants" because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. California has also established standards for toxic air contaminants such as visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Table 3.2-3 presents the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for these aforementioned air pollutants. Note that there are no State or federal air quality standards for VOCs, benzene, or DPM.

Table 3.2-3: Federal and State Air Quality Standards

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]
Ozone	1 Hour	0.09 ppm	—
	8 Hour	0.070 ppm	0.070 ppm[f]
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm
	Annual	0.030 ppm	0.053 ppm
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm
	8 Hour	9.0 ppm	9 ppm
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm
	3 Hour	—	0.5 ppm
	24 Hour	0.04 ppm	0.14 (for certain areas)
	Annual	—	0.030 ppm (for certain areas)
Lead[e]	30-day	1.5 µg/m^3	—
	Quarter	—	1.5 µg/m^3
	Rolling 3-month average	—	0.15 µg/m^3
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3
	Mean	20 µg/m^3	—
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3
	Annual	12 µg/m^3	12.0 µg/m^3

Table 3.2-3 (cont.): Federal and State Air Quality Standards

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]
Visibility-reducing particles	8 Hour	See note below[d]	
Sulfates	24 Hour	25 µg/m^3	—
Hydrogen sulfide	1 Hour	0.03 ppm	—
Vinyl chloride[e]	24 Hour	0.01 ppm	—

Notes:
ppm = parts per million (concentration) µg/m^3 = micrograms per cubic meter Annual = Annual Arithmetic Mean
30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3-Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour nitrogen dioxide national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 part per billion (ppb). The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility reducing particles: In 1989, the ARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the Statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[f] The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.

Source of effects, properties, and sources: South Coast Air Quality Management District (SCAQMD) 2007a; California Environmental Protection Agency (Cal/EPA) 2002; California Air Resources Board (ARB) 2009; United States Environmental Protection Agency (EPA) 2003, 2009a, 2009b, 2010, 2011a, and 2012; National Toxicology Program 2011a and 2011b. Source of Standards: California Air Resources Board (ARB) 2013c.

Ambient air pollutant concentrations in the SFBAAB are measured at air quality monitoring stations operated by the ARB and BAAQMD. In general, the SFBAAB experiences low concentrations of most pollutants compared to federal or State standards.

Both the EPA and ARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. "Attainment" status refers to those regions that are meeting federal and/or State standards for a specified criteria pollutant. "Nonattainment" refers to regions that do not meet federal and/or State standards for a specified criteria pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status for a specified criteria air pollutant. Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring

values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the SFBAAB are shown in Table 3.2-4. The SFBAAB is designated as nonattainment for the State ozone, PM_{10}, and $PM_{2.5}$, standards, nonattainment for the national ozone and $PM_{2.5}$ standards, and unclassified for the national PM_{10} standard.

Table 3.2-4: San Francisco Bay Area Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO2	Attainment	Attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Nonattainment
Sulfates	Attainment	N/A
Hydrogen Sulfates	Unclassified	N/A
Visibility-reducing Particles	Unclassified	N/A
Lead	N/A	Attainment

Source: Bay Area Air Quality Management District (BAAQMD). 2017. Air Quality Standards and Attainment Status. January. Website: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed February 8, 2019.

Air Quality Index

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest in comparison is to the State and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3.2-5 provides a description of the health impacts of ozone at different concentrations.

Table 3.2-5: Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI—51–100—Moderate	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 55–70 ppb	**Health Effects Statements**: Unusually sensitive individuals may experience respiratory symptoms.

Table 3.2-5 (cont.): Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI—101–150—Unhealthy for Sensitive Groups Concentration 86–105 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI—151–200—Unhealthy Concentration 86–105 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI—201–300—Very Unhealthy Concentration 106–200 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
Source: Air Now. 2015. AQI Calculator: AQI to Concentration. Website: http://www.airnow.gov/index.cfm?action=resources.aqi_conc_calc. Accessed September 2, 2017.	

Local Air Quality

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature inversions interact with the physical features of the landscape to determine the movement and dispersal of air pollutant emissions and, consequently, their effect on air quality.

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the plan area. Table 3.2-6 summarizes 2015 through 2017 published monitoring data, which is the most recent three-year period available. The table displays data from the Concord monitoring station, which is located approximately 2.10 miles east of the plan area. The data shows that during the past few years, the plan area and the surrounding area has exceeded the standards for ozone (State) and $PM_{2.5}$ (national). The data in the table reflects the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period. Note that no recent monitoring data for Contra Costa County or the SFBAAB is available for CO or SO_2. Generally, air monitoring is not conducted for pollutants that are no longer likely to exceed ambient air quality standards.

Table 3.2-6: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2015	2016	2017
Ozone[1]	1 Hour	Max 1 Hour (ppm)	0.088	**0.095**	0.082
		Days > State Standard (0.09 ppm)	0	1	0
	8 Hour	Max 8 Hour (ppm)	**0.074**	**0.075**	0.070
		Days > State Standard (0.07 ppm)	4	2	0
		Days > National Standard (0.075 ppm)	0	0	0
Carbon monoxide (CO)[2]	8 Hour	Max 8 Hour (ppm)	ID	ID	ID
		Days > State Standard (9.0 ppm)	ID	ID	ID
		Days > National Standard (9 ppm)	ID	ID	ID
Nitrogen dioxide (NO_2)[1]	Annual	Annual Average (ppm)	7	6	6
	1 Hour	Max 1 Hour (ppm)	0.033	0.033	0.040
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur dioxide (SO_2)	Annual	Annual Average (ppm)	ID	ID	ID
	24 Hour	Max 24 Hour (ppm)	ID	ID	ID
		Days > State Standard (0.04 ppm)	ID	ID	ID
Inhalable coarse particles (PM_{10})[1]	Annual	Annual Average (µg/m^3)	13.1	11.5	6.5
	24 hour	24 Hour (µg/m^3)	24.0	19.0	41.0
		Days > State Standard (50 µg/m^3)	0	0	ID
		Days > National Standard (150 µg/m^3)	0	0	ID
Fine particulate matter ($PM_{2.5}$)[1]	Annual	Annual Average (µg/m^3)	8.8	6.0	12.0
	24 Hour	24 Hour (µg/m^3)	31.0	20.7	**89.4**
		Days > National Standard (35 µg/m^3)	0	0	6

Table 3.2-6 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2015	2016	2017
Notes: > = exceed ppm = parts per million µg/m^3 = micrograms per cubic meter ID = insufficient data ND = no data max = maximum **Bold** = exceedance State Standard = California Ambient Air Quality Standard National Standard = National Ambient Air Quality Standard [1] Concord Station Source: California Air Resources Board (ARB) 2014: Concord Station. Website: https://www.arb.ca.gov/adam/trends/trends1.php. Accessed July 9, 2018.					

Based on the AQI scale for the 8-hour ozone standard (Table 3.2-5), the plan area and the surrounding area experienced no days in the most recent 3-year reporting period that would be categorized as very unhealthy (AQI 201-250) or unhealthy (AQI 151-200). The highest reading was 75 ppb in 2015, which would fall in the range for unhealthy for sensitive groups (AQI 51-100).

Air Pollution Sensitive Receptors

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects related to air pollutants exposure than others. Land uses such as residences, schools, day care centers, hospitals, nursing and convalescent homes, and parks are considered to be the most sensitive to poor air quality, because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than that for other land uses. Therefore, these groups are referred to as sensitive receptors. Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, 350 days per year, for 70 years. The BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, day care centers, hospitals, and senior-care facilities.

Plan Area Vicinity

Air pollution sensitive receptors in the vicinity of the plan area include single-family residential buildings located immediately south and east of the plan area and a school and public park located immediately north of the plan area. The adjacent neighborhoods to the south and east predominately contain low-density residential uses with the closest residence to the south located 40 feet from the plan area and the closest residence to the east located approximately 160 feet from the plan area. A mix of commercial and office uses are located immediately west of the plan area, but these uses are not considered air pollution sensitive receptors. A middle school and public park are located approximately 60 feet north and 80 feet north of the plan area, respectively.

Plan Area

Civic Project and Residential Project

There are currently no air pollution sensitive receptors located within the plan area.

Existing Air Pollutant Emissions

Plan Area Vicinity

Mobile Emissions

The primary sources of air pollutants (both criteria air pollutant and TACs) in the vicinity of the plan area are the building-related energy use and motor-related vehicle trips associated with the local residential, commercial, school, and recreational uses. Other sources of emissions include space and water heating, landscape maintenance, and consumer products from nearby residential and commercial use.

Stationary Emissions

In addition, there is one permitted stationary source located within 1,000 feet of the plan area. The BAAQMD identifies the locations of all stationary sources within the Bay Area that have BAAQMD permits. For each emissions source, the BAAQMD provides conservative cancer risk and $PM_{2.5}$ concentration increase values. As shown in Table 3.2-7, there is one existing air pollutant emissions stationary source identified by this screening tool that is located within approximately 1,000 feet of the plan area.

Table 3.2-7: Existing Air Pollutant Emissions Stationary Source(s) in Vicinity of the Plan Area

Plant No.	Type	Address	Distance from Plan Area
G11826	Gasoline Dispensing Facility	1616 Oak Park Boulevard, Pleasant Hill	Approximately 900 feet southeast from the plan area
Source: BAAQMD 2010.			

Plan Area

The plan area is occupied by two existing buildings, both of which are located on the property known as 1750 Oak Park Boulevard (on the west side of Monticello Avenue). The existing buildings include the 37,364-square-foot Pleasant Hill Library and vacant municipal administrative offices totaling 42,083 square feet. Since the administration buildings are vacant, it was assumed that existing operations would only include the 37,364-square-foot library.

The weekday and Saturday trip generation rates for existing operations were obtained from the transportation impact assessment (included in Appendix J).[3] As Sunday trips were not explicitly stated in the transportation impact assessment, Saturday trip generation rates are applied to both Saturday and Sunday trips. The existing library is estimated to generate 1,500 average daily trips Monday through Friday and 1,270 average daily trips on Saturday. Emissions associated with operation of the existing library on the plan area are shown by source in Table 3.2-8.

[3] Fehr & Peers. 2019. Final Transportation Impact Assessment, prepared for the City of Pleasant Hill. January.

Table 3.2-8: Existing Air Pollutant Emissions at the Plan Area

Emission Source	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
2018 Operational Year				
Area	0.17	0.00	0.00	0.00
Energy	0.00	0.05	0.00	0.00
Mobile	0.46	1.82	0.92	0.26
Total 2018 Existing Operations	**0.63**	**1.87**	**0.93**	**0.26**
2021 Operational Year				
Area	0.17	0.00	0.00	0.00
Energy	0.00	0.05	0.00	0.00
Mobile	0.35	1.49	0.92	0.01
Total 2021 Existing Operations	**0.52**	**1.53**	**0.92**	**0.01**

Notes:
ROG = reactive organic gases
NO_X = oxides of nitrogen
PM_{10} = particulate matter 10 microns in diameter
$PM_{2.5}$ = particulate matter 2.5 microns in diameter
Source of emissions: CalEEMod Output (Appendix C).

3.2.3 - Regulatory Framework

Federal

Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA. These are particulate matter, ground-level ozone, CO, sulfur oxides, nitrogen oxides, and lead. The EPA calls these pollutants criteria air pollutants, because it regulates them by developing human health-based and/or environmentally based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards.[4] The federal standards are called NAAQS. The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards.

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the

[4] United States Environmental Protection Agency (EPA). 2014. Clean Air Act Requirements and History. Website: https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history. Accessed April 25, 2016.

health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

The Clean Air Act also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies.

EPA Emission Standards for New Off-road Equipment

Before 1994, there were no standards to limit the amount of emissions from off-road equipment. In 1994, the EPA established emission standards for hydrocarbons, NO_X, CO, and PM to regulate new pieces of off-road equipment. These emission standards came to be known as Tier 1. Since that time, increasingly more stringent Tier 2, Tier 3, and Tier 4 (interim and final) standards were adopted by the EPA, as well as by the ARB. Each adopted emission standard was phased in over time. New engines built in and after 2015 across all horsepower sizes must meet Tier 4 final emission standards. In other words, new manufactured engines cannot exceed the emissions established for Tier 4 final emissions standards.

State

California Air Quality Control Plan (State Implementation Plan)

An SIP is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The SIP for California is administered by the ARB, which has overall responsibility for Statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for regional air districts—an air district prepares their federal attainment plan, which is sent to the ARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional State and local regulation is required to achieve the standards.

California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation, and required additional actions beyond the federal mandates. The ARB administers the CAAQS for the 10 air pollutants designated in the CCAA. The 10 State air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent

than similar federal regulations implementing the CAA. Generally, the planning requirements of the CCAA are less stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

Other ARB responsibilities include but are not limited to overseeing local air district compliance with California and federal laws; approving local air quality plans; submitting SIPs to the EPA; monitoring air quality; determining and updating area designations and maps; and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

California Health and Safety Code Section 39655 and California Code of Regulations Title 17 Section 93000 (Substances Identified as Toxic Air Contaminants)

The ARB identifies substances as TACs as defined in Health and Safety Code Section 39655 and listed in Title 17, Section 93000 of the California Code of Regulations, "Substances Identified As Toxic Air Contaminants." A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there are thresholds set by regulatory agencies below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards. According to the California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs for the State of California can be attributed to relatively few compounds, the most important of which is DPM from diesel-fueled engines.

California Low-emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, the ARB adopted the LEV III amendments to California's LEV regulations. These amendments, also known as the Advanced Clean Car Program, include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and greenhouse gas (GHG) emissions for new passenger vehicles.[5]

California On-Road Heavy-duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, and test procedures. The ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty

[5] California Air Resources Board (ARB). 2013. Clean Car Standards—Pavley, Assembly Bill 1493. Website: http://www.arb.ca.gov/cc/ccms/ccms.htm. Accessed February 14, 2017.

Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others.[6]

California In-use Off-road Diesel Vehicle Regulation

On July 26, 2007, the ARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_X emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014, for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks).[7]

California Airborne Toxics Control Measure for Asbestos

The ARB has adopted Airborne Toxics Control Measures for sources that emit a particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology to minimize emissions.

In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices (BMPs) to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and

[6] California Air Resources Board (ARB). 2013. The California Almanac of Air Quality and Emissions—2013 Edition. Website: http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed February 14, 2017.

[7] California Air Resources Board (ARB). 2015. On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Website: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed September 22, 2017.

engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. Buildings often include materials containing asbestos, and the Residential Project involves the demolition of existing buildings (the existing library and the existing vacant administrative offices) totaling approximately 79,447 square feet.[8] Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxics Control Measure for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near the City of Pleasant Hill.

Verified Diesel Emission Control Strategies

The EPA and ARB tiered off-road emission standards only apply to new engines and off-road equipment can last several years. The ARB has developed Verified Diesel Emission Control Strategies (VDECS), which are devices, systems, or strategies used to achieve the highest level of pollution control from existing off-road vehicles, to help reduce emissions from existing engines. VDECS are designed primarily for the reduction of diesel PM emissions and have been verified by the ARB. There are three levels of VDECS, the most effective of which is the Level 3 VDECS. Tier 4 engines are not required to install VDECS because they already meet the emissions standards for lower tiered equipment with installed controls.

California Diesel Risk Reduction Plan

The ARB Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with

[8] For purposes of estimating emissions, it was assumed that buildings totaling 79,457 square feet would be demolished.

the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020.[9]

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588), also known as the Hot Spots Act. To date, ARB has identified more than 21 TACs, and has adopted EPA list of HAPs as TACs.

Carl Moyer Memorial Air Quality Standards Attainment Program

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program), a partnership between the ARB and local air districts, issues grants to replace or retrofit older engines and equipment with engines and equipment that exceed current regulatory requirements to reduce air pollution. Money collected through the Carl Moyer Program complements California's regulatory program by providing incentives to effect early or extra emission reductions, especially from emission sources in environmental justice communities and areas disproportionately affected by air pollution. The program has established guidelines and criteria for the funding of emissions reduction projects. Within the SFBAAB, the BAAQMD administers the Carl Moyer Program. The program establishes cost-effectiveness criteria for funding emission reductions projects, which under the final 2017 Carl Moyer Program Guidelines are $30,000 per weighted ton of NO_X, ROG, and PM.[10]

Regional

BAAQMD CEQA Air Quality Guidelines

The BAAQMD is the primary agency responsible for ensuring that air quality standards (NAAQS and CAAQS) are attained and maintained in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the national ozone standard, Clean Air Plans) for the California standard, and PM plans to fulfill federal air quality planning requirements. Additionally, the BAAQMD inspects stationary sources of air pollution; responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the Clean Air Act, the Clean Air Act Amendments of 1990, and the California Clean Air Act.

The BAAQMD developed quantitative thresholds of significance for its California Environmental Quality Act (CEQA) Guidelines in 2010, which were also included in its updated 2011 Guidelines (BAAQMD 2010; BAAQMD 2011). The BAAQMD adoption of the 2010 thresholds of significance was later challenged in court. In an opinion issued on December 17, 2015, related to the BAAQMD CEQA Guidelines, the California Supreme Court held that CEQA does not generally require an analysis of the impacts of locating development in areas subject to environmental hazards unless the project would exacerbate existing environmental hazards. The Supreme Court also found that CEQA requires the analysis of exposing people to environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination,

[9] California Air Resources Board (ARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles. Website: http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf. Accessed September 22, 2017.

[10] California Air Resources Board (ARB). 2017. 2017 Carl Moyer Program Guidelines. Website: https://www.arb.ca.gov/msprog/moyer/guidelines/current.htm. Accessed June 2, 2018.

and certain exemptions for infill and workforce housing. The Supreme Court also held that public agencies remain free to voluntarily conduct this analysis not required by CEQA for their own public projects (CBIA v. BAAQMD [2016] 2 Cal.App.5th 1067, 1083).

In view of the Supreme Court's opinion, the BAAQMD published a new version of its CEQA Guidelines in May 2017. The BAAQMD CEQA Guidelines state that local agencies may rely on thresholds designed to reflect the impact of locating development near areas of toxic air contamination where such an analysis is required by CEQA or where the agency has determined that such an analysis would assist in making a decision about the project. However, the thresholds are not mandatory and agencies should apply them only after determining that they reflect an appropriate measure of a project's impacts. The BAAQMD's guidelines for implementation of the thresholds are for informational purposes only, to assist local agencies.

BAAQMD Particulate Matter Plan

To fulfill federal air quality planning requirements, the BAAQMD adopted a $PM_{2.5}$ emissions inventory for year 2010 at a public hearing on November 7, 2012. The Bay Area Clean Air Plan also included several measures for reducing PM emissions from stationary sources and wood burning. On January 9, 2013, the EPA issued a final rule determining that the Bay Area has attained the 24-hour $PM_{2.5}$ NAAQS, suspending federal SIP planning requirements for the SFBAAB.[11] Despite this EPA action, the SFBAAB will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until the BAAQMD submits a redesignation request and a maintenance plan to the EPA, and the EPA approves the proposed redesignation.

The SFBAAB is in nonattainment for the federal PM_{10} and federal $PM_{2.5}$ standards. The EPA lowered the 24-hour $PM_{2.5}$ standard from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$ in 2006, and designated the Air Basin as nonattainment for the new $PM_{2.5}$ standard effective December 14, 2009.

On December 8, 2011, the ARB submitted a "clean data finding" request to the EPA on behalf of the Bay Area. If the clean data finding request is approved, then EPA guidelines provide that the region can fulfill federal $PM_{2.5}$ SIP requirements by preparing either a redesignation request and a $PM_{2.5}$ maintenance plan, or a "clean data" SIP submittal. Because peak $PM_{2.5}$ levels can vary from year to year based on natural, short-term changes in weather conditions, the BAAQMD believes that it would be premature to submit a redesignation request and $PM_{2.5}$ maintenance plan at this time. Therefore, the BAAQMD will prepare a "clean data" SIP to address the required elements, including:

- An emission inventory for primary $PM_{2.5}$, as well as precursors to secondary PM formation
- Amendments to the BAAQMD's New Source Review regulation to address $PM_{2.5}$

BAAQMD 2017 Clean Air Plan

The BAAQMD adopted the Bay Area Clean Air Plan: Spare the Air, Cool the Climate (Bay Area Clean Air Plan) on April 19, 2017, to provide a regional strategy to improve Bay Area air quality and meet public

[11] United States Environmental Protection Agency (EPA). 2013. Federal Register. Determination of Attainment for the San Francisco Bay Area Nonattainment Area for the 2006 Fine Particle Standard; California; Determination Regarding Applicability of Clean Air Act Requirements. Website: https://www.federalregister.gov/documents/2013/01/09/2013-00170/determination-of-attainment-for-the-san-francisco-bay-area-nonattainment-area-for-the-2006-fine. Accessed June 5, 2018.

health goals.[12] The control strategy described in the Bay Area Clean Air Plan includes a wide range of control measures designed to reduce emissions and lower ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce GHG emissions to protect the climate.

The Bay Area Clean Air Plan addresses four categories of pollutants: ground-level ozone and its key precursors, ROG and NO_X; PM, primarily $PM_{2.5}$, and precursors to secondary $PM_{2.5}$; air toxics; and GHGs. The control measures are categorized based on the economic sector framework including stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, and water measures.[13]

BAAQMD Regulations

Regulation 2, Rule 5 (New Source Review Permitting)

The BAAQMD regulates backup emergency generators, fire pumps, and other sources of TACs through its New Source Review (Regulation 2, Rule 5) permitting process.[14] Although emergency generators are intended to be used only during periods of power outages, monthly testing of each generator is required; however, the BAAQMD limits testing to no more than 50 hours per year. Each emergency generator installed is assumed to meet a minimum of Tier 2 emission standards (before control measures). As part of the permitting process, the BAAQMD limits the excess cancer risk from any facility to no more than 10 per 1-million-population for any permits that are applied for within a 2-year period and would require any source that would result in an excess cancer risk greater than 1 per 1 million to install Best Available Control Technology for Toxics.

Regulation 8, Rule 3 (Architectural Coatings)

This rule governs the manufacture, distribution, and sale of architectural coatings and limits the reactive organic gases content in paints and paint solvents. Although this rule does not directly apply to the proposed plan, it does dictate the ROG content of paint available for use during the construction.

Regulation 8, Rule 15 (Emulsified and Liquid Asphalts)

Although this rule does not directly apply to the proposed plan, it does dictate the reactive organic gases content of asphalt available for use during the construction through regulating the sale and use of asphalt and limits the ROG content in asphalt.

Regulation 1, Rule 301 (Odorous Emissions)

The BAAQMD is responsible for investigating and controlling odor complaints in the Bay Area. The agency enforces odor control by helping the public to document a public nuisance. Upon receipt of a complaint, the BAAQMD sends an investigator to interview the complainant and to locate the odor source if possible. The BAAQMD typically brings a public nuisance court action when there are a substantial number of confirmed odor events within a 24-hour period. An odor source with five or

[12] Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed April 24, 2018.

[13] *Ibid*.

[14] Bay Area Air Quality Management District (BAAQMD). 2016. NSR [New Source Review Permitting]. Website: http://www.baaqmd.gov/permits/permitting-manuals/nsr-permitting-guidance. Accessed March 4, 2019.

more confirmed complaints per year averaged over 3 years is considered to have a substantial effect on receptors.

Several BAAQMD regulations and rules apply to odorous emissions. Regulation 1, Rule 301 is the nuisance provision that states that sources cannot emit air contaminants that cause nuisance to a number of persons. Regulation 7 specifies limits for the discharge of odorous substances where the BAAQMD receives complaints from 10 or more complainants within a 90-day period. Among other things, Regulation 7 precludes discharge of an odorous substance that causes the ambient air at or beyond the property line to be odorous after dilution with 4 parts of odor-free air, and specifies maximum limits on the emission of certain odorous compounds.

Association of Bay Area Governments and Metropolitan Transportation Commission Plan Bay Area

On July 18, 2013, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) approved the Plan Bay Area. The Plan Bay Area includes integrated land use and transportation strategies for the region and was developed through OneBayArea, a joint initiative between ABAG, BAAQMD, MTC, and the San Francisco Bay Conservation and Development Commission. The Plan's transportation policies focus on maintaining the extensive existing transportation network and utilizing these systems more efficiently to handle density in Bay Area transportation cores.[15] Assumptions for land use development used are taken from local and regional planning documents. Emission forecasts in the Bay Area Clean Air Plan rely on projections of vehicle miles traveled, population, employment, and land use projections made by local jurisdictions during development of Plan Bay Area. The Plan Bay Area 2040 was adopted July 2017 and updates Plan Bay Area.

Plan Bay Area 2040, published by the MTC and ABAG, is a long-range integrated transportation and land use/housing strategy through 2040 for the Bay Area. Plan Bay Area 2040 functions as the sustainable communities' strategy mandated by Senate Bill (SB) 375. As a regional land use plan, Plan Bay Area 2040 aims to reduce per-capita GHG emissions through the promotion of more compact, mixed-use residential and commercial neighborhoods located near transit. Plan Bay Area 2040 is a limited and focused update that builds upon a growth pattern and strategies developed in the original Plan Bay Area (adopted by the MTC in 2013) but with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last four years.

Local

Pleasant Hill 2003 General Plan

The Pleasant Hill 2003 General Plan[16] establishes the following goals and policies that are relevant to both air quality and the proposed plan:

Community Development Element

- **Policy 23A:** Give priority to development that incorporates energy-efficient and resource conserving design and construction.

[15] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2013. Plan Bay Area. Website: https://www.planbayarea.org/previous-plan.

[16] Pleasant Hill 2003 General Plan. 2003. Current Pleasant Hill General Plan [updated elements]. Website: https://www.ci.pleasant-hill.ca.us/132/Current-General-Plan.

- **Policy 23B:** Support and expand recycling programs for residential, commercial and industrial uses, with the goal of attaining the mandated 50 percent diversion rate.

Circulation Element[17]

- **Goal 6.** Reduce congestion and vehicle trips through non-automobile transportation and public transit.
- **Policy 6A.** Encourage use of bus and rail service for local and regional travel.
- **Policy 6B.** Encourage use of carpooling and ridesharing for local and regional travel.
- **Program 6.2.** Improve accessibility to transit.
- **Program 6.10.** Work with employers, schools, and developers to encourage ridesharing and transit use.
- **Program 6.11.** Work with employers, schools, and developers to encourage innovative transportation measures.
- **Program 6.12.** Encourage development of infrastructure (public and private) to support the use of electric and other alternative fuel vehicles.

Growth Management Element[18]

- **Program 3.5:** Promote the use of carpools and vanpools by supporting and advertising services and programs implemented by 511ContraCosta.org, which operates transportation demand management programs and services in the City.
- **Program 3.6:** Work with 511ContraCosta.org to encourage transportation demand management programs in new development and businesses.

Safety and Noise Element

- **Policy 8A:** Promote measures that improve air quality and help meet air quality attainment standards.
- **Policy 8B:** Minimize the air quality impacts of vehicle emissions, and promote the use of clean alternative fuels.
- **Policy 8C:** Encourage use of electric (rather than gasoline-powered) equipment and natural gas appliances, including outdoor grills.

Housing Element

- **Policy 2D:** Encourage mixed-use development at underutilized sites, where appropriate.
- **Policy 5C:** Ensure that new residential development is compatible with surrounding neighborhoods.
- **Policy 5E:** Provide public services and improvements that keep neighborhoods safe and livable.
- **Policy 8A:** Encourage energy conservation practices for new and existing residential dwellings.
- **Policy 8B:** Encourage the use of green building and sustainable practices for new and renovation projects throughout the City.

[17] City of Pleasant Hill. 2015. Pleasant Hill 2003 General Plan—Circulation Element (Updated April 2015). Website: https://www.ci.pleasant-hill.ca.us/132/Current-General-Plan. Accessed March 6, 2019.
[18] City of Pleasant Hill. 2013. Pleasant Hill 2003 General Plan—Growth Management Element (Updated April 2013). Website: https://www.ci.pleasant-hill.ca.us/132/Current-General-Plan. Accessed April 11, 2019.

3.2.4 - Impacts and Mitigation Measures

Significance Criteria

According to 2019 CEQA Guidelines Appendix G, to determine whether impacts related to air quality are significant environmental effects, the following questions are analyzed and evaluated. Would the implementation of the proposed plan:

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 non-attainment under an 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?

Approach to Analysis

Emission factors represent the emission rate of a pollutant over a given time or activity; for example, grams of NO_X per vehicle mile traveled (VMT) or grams of NO_X per horsepower hour of equipment operation. The ARB has published emission factors for on-road mobile vehicles/trucks in the Emission Factor (EMFAC) mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. Activity levels are a measure of how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or VMT per day. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was developed in collaboration with the SCAQMD and other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with construction and operation from a variety of land uses.

The modeling follows the BAAQMD guidance where applicable from the BAAQMD CEQA Air Quality Guidelines. The models used in this analysis are summarized as follows:

- **Construction criteria pollutant and precursor emissions:** CalEEMod, version 2016.3.2
- **Operational criteria pollutant and precursor emissions:** CalEEMod, version 2016.3.2
- **Construction TAC emission air dispersion assessment:** EPA AERMOD dispersion model, version 18081

The following criteria air pollutants and precursors are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides (NO_X)
- Carbon monoxide (CO)

- Particulate matter less than 10 microns in diameter (PM_{10})
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the development of the Civic Project and Residential Project would emit ozone precursors ROG and NO_X. However, the development of the Civic Project and Residential Project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reactions of ozone precursors.

Construction-related Criteria Pollutants

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from both on-site and off-site activities. On-site emissions consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application of architectural coatings would release ROG emissions. Off-site emissions result from motor vehicle exhaust from delivery vehicles, worker traffic and road dust (PM_{10} and $PM_{2.5}$).

Schedule

The implementation of the proposed plan would include the construction of residences, a new library, and athletic fields as well as roadway improvements. Based on information outlined in Chapter 2, Project Descriptions, construction was assumed to take place six days per week and an average of 10.25 hours per day, and is anticipated to be completed over three phases after the demolition of existing buildings on the Residential Project site. The major construction activities associated with each phase are noted in Table 3.2-9, while a detailed account of the construction activities in each phase is included in Chapter 2, Project Descriptions. Construction activities are anticipated to begin as early as September 2019, which provides a conservative estimate of emissions, as vehicle efficiency improves over time. Construction activities would include demolition, site preparation, grading, building construction, paving, and architectural coating. CalEEMod defaults were used for the construction equipment. The conceptual construction schedule is shown in Table 3.2-9.

Table 3.2-9: Conceptual Construction Schedule

Construction Activity	Assumed Construction Schedule		Working Days	Working Days
	Start Date	End Date		
Demolition Phase of Construction (Includes Demolition and all Buildings and Removal of Surfaces for All Properties)				
Demolition	9/2/2019	9/24/2019	6	20
Phase I Construction (Includes Site Preparation Activities for All Properties)				
Site Preparation	9/25/2019	2/12/2020	6	121
Paving	2/13/2020	2/19/2020	6	6
Grading	2/20/2020	5/31/2020	6	87

Table 3.2-9 (cont.): Conceptual Construction Schedule

Construction Activity	Assumed Construction Schedule		Working Days	Working Days
	Start Date	End Date		
Phase II Construction (Includes of Building Construction Associated with the Proposed Library and Proposed Residential Portions, Work Along Roads, with the Proposed Park Area to be Used as a Staging Area)				
Paving	6/1/2020	6/23/2020	6	20
Building Construction	6/24/2020	4/14/2021	6	253
Architectural Coating	4/15/2021	5/7/2021	6	20
Phase III Construction (Includes Roadway Improvements, Landscaping Along Plan Area Limits, and Construction of the Proposed Park)				
Site Preparation	5/8/2021	5/13/2021	6	5
Building Construction	5/14/2021	6/17/2021	6	30
Architectural Coating	6/18/2021	6/29/2021	6	10
Paving	6/30/2021	7/31/2021	6	28
Source: FirstCarbon Solutions (FCS) and CalEEMod, based on plan-specific information; see Appendix C.				

The schedule shown in Table 3.2-9 presents a conservative estimate, which assumes that some of the construction of the Civic Project and Residential Project would overlap.

Equipment Tiers and Emission Factors

Equipment tiers refer to a generation of emission standards established by the EPA and the ARB that apply to diesel engines in off-road equipment. The "tier" of an engine depends on the model year and horsepower rating; generally, the newer a piece of equipment is, the greater the tier it is likely to have. Excluding engines greater than 750 horsepower, Tier 1 engines were manufactured generally between 1996 and 2003. Tier 2 engines were manufactured between 2001 and 2007. Tier 3 engines were manufactured between 2006 and 2011. Tier 4 engines are the newest and some incorporate hybrid electric technology; they were manufactured after 2007.

Construction emissions are generally calculated as the product of an activity factor and an emission factor. The activity factor for construction equipment is a measure of how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or the amount of fuel consumed in a given amount of time. The emission factor relates the process activity to the amount of pollutant emitted. Examples of emission factors include grams of emissions per miles traveled and grams of emissions per horsepower-hour. The operation of a piece of equipment is tempered by its load factor which is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity. This analysis uses the CalEEMod default load factors for off-road equipment.

On-site Off-road Equipment

CalEEMod contains built-in inventories of construction equipment for a variety of land use construction projects that incorporate estimates of the number of equipment, their age, their horsepower, and emission control equipment tier mix from which rates of emissions are developed. These inventories were developed based on construction surveys for several land use projects. Table 3.2-10 presents the construction equipment used for implementation of the Civic Project and Residential Project as derived from CalEEMod. The CalEEMod default emission control equipment tier mix was used in this analysis for the estimation of unmitigated emissions from on-site construction equipment.

Table 3.2-10: Proposed Plan Construction Equipment Assumptions for all Phases of Construction

Phase Name	Equipment	Amount	Usage Hours per Day	Horsepower	Load Factor
Demolition Phase of Construction					
Demolition	Concrete/Industrial Saws	1	8	81	0.73
	Excavators	3	8	158	0.38
	Rubber Tired Dozers	2	8	247	0.40
Phase I Construction					
Paving	Pavers	2	8	130	0.42
	Paving Equipment	2	8	132	0.36
	Rollers	2	8	80	0.38
Site Preparation	Rubber Tired Dozers	3	8	247	0.40
	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	2	8	158	0.38
	Graders	1	8	187	0.41
	Rubber Tired Dozers	1	8	247	0.40
	Scrapers	2	8	367	0.48
	Tractors/Loaders/Backhoes	2	8	97	0.37
Phase II Construction					
Building Construction	Cranes	1	7	231	0.29
	Forklifts	3	8	89	0.20
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
Paving	Pavers	2	8	130	0.42
	Paving Equipment	2	8	132	0.36
	Rollers	2	8	80	0.38

Table 3.2-10 (cont.): Proposed Plan Construction Equipment Assumptions for all Phases of Construction

Phase Name	Equipment	Amount	Usage Hours per Day	Horsepower	Load Factor
Architectural Coating	Air Compressors	1	6	78	0.48
Phase III Construction					
Site Preparation	Rubber Tired Dozers	3	8	247	0.40
	Tractors/Loaders/Backhoes	4	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
	Forklifts	3	8	89	0.20
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
Paving	Pavers	2	8	130	0.42
	Paving Equipment	2	8	132	0.36
	Rollers	2	8	80	0.38
Architectural Coating	Air Compressors	1	6	78	0.48

Source: FirstCarbon Solutions (FCS) and CalEEMod, see Appendix C.

Demolition, Site Preparation, and Grading

The development of the Civic Project and Residential Project would include the demolition of existing buildings totaling approximately 79,447 square feet[19] and the removal of existing surfaces totaling approximately 331,598 square feet. A detailed breakdown of the impervious and pervious surfaces currently occupying the plan area is included in Chapter 2, Project Descriptions. CalEEMod allows the input of demolition parameters in either building square feet or tons of debris; therefore, in order to reflect these activities, the material to be demolished or removed was converted to tons of debris. It was estimated that the development of the Civic Project and Residential Project would require the removal of approximately 14,947 tons of debris. Demolition emissions were calculated in CalEEMod using default equipment assumptions and amounts of material to be removed. The calculations used to estimate the amount of debris to be removed are included in Appendix C.

During grading activities, fugitive dust can be generated from the movement of dirt within the plan area. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt onto haul trucks. Each activity is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

[19] For purposes of estimating emissions, it was assumed that buildings totaling 79,457 square feet would be demolished.

Only some pieces of equipment are assumed to generate fugitive dust in CalEEMod. The CalEEMod model manual identifies various equipment and the acreage disturbed in an 8-hour day for each piece of equipment:

- **Crawler tractors, graders, and rubber-tired dozers:** 0.5 acre per 8-hour day
- **Scrapers:** 1 acre per 8-hour day

Hauling would be required to export material from the site. Based on information provided by the project sponsors, it is estimated that the Civic Project would require approximately 500 cubic yards of dirt to be cut and exported from the Civic Project site and would require 5,760 cubic yards of fill, which would be imported to the site. Site preparation for the Residential Project would require approximately 9,000 cubic yards of cut and 4,000 cubic yards of fill, with a net export of 5,000 cubic yards of material exported from the Residential Project site. The haul trips associated with the off-site import and export of soil were accounted for in the demolition and Phase II site preparation phases, as shown in Table 3.2-10. All other soil was assumed to balance on-site.

Off-site On-road Vehicle Trips

The CalEEMod model defaults trip length and vehicle fleet were used. The CalEEMod model run used the default worker trip length of 10.8 miles, vendor trip length of 7.3, and the hauling trip length of 20 miles. Consistent with the details provided in Chapter 2, Project Descriptions, it was assumed that all phases of construction would have 84 average daily worker trips, based on information provided by the project sponsors. To account for the delivery of materials, it was assumed that every phase of construction following the demolition phase would have up to six truck trips per day, accounted for as vendor trips for all of Phase I, all of Phase II, and all construction activities in Phase II other than building construction. Since Phase II includes the erection of the proposed library and residential land uses and could require more than six vendor trips, the higher default vendor trips were retained for the building construction phase of Phase II. A summary of the construction-related trips is shown in Table 3.2-11. Please note that worker and vendor trips are in terms of worker trips per day, while haul trips are presented as total trips.

Table 3.2-11: Construction Off-site Vehicle Trips

Construction Activity	Construction Trips per Day		Total Construction Trips
	Worker	Vendor	Haul
Demolition Phase of Construction			
Demolition	84	0	1,478
Phase I Construction			
Paving	84	6	0
Site Preparation	84	6	1,408
Grading	84	6	0
Phase II Construction			
Building Construction	84	49	6
Paving	84	6	0

Table 3.2-11 (cont.): Construction Off-site Vehicle Trips

Construction Activity	Construction Trips per Day		Total Construction Trips
	Worker	Vendor	Haul
Architectural Coating	84	6	0
Phase III Construction			
Site Preparation	84	6	0
Building Construction	84	6	0
Paving	84	6	0
Architectural Coating	84	6	0
Source: FirstCarbon Solutions (FCS) and CalEEMod, see Appendix C.			

Off-gassing Materials

Asphalt paving and architectural coating materials used during construction would generate off-gas emissions of ROGs. The data collection process determined the acres of asphalt paving required, which CalEEMod uses to determine associated ROG emissions. CalEEMod contains assumptions for application of architectural coatings that are based on the BAAQMD's coating regulations and use type, and square footage of the buildings to be constructed and were used to quantify emissions.

Operation-related Criteria Pollutants

To ensure a conservative analysis, operational emissions were analyzed assuming full-buildout of the Civic Project and Residential Project in 2021, consistent with the conceptual schedule presented in Table 3.2-9.

On-road Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the plan area. The emissions were estimated using CalEEMod. The weekday and Saturday trip generation rates for the Civic Project and Residential Project operations were obtained from the transportation impact assessment (included in Appendix J).[20] As Sunday trips were not explicitly stated in the transportation impact assessment, Saturday trip generation rates were applied to both Saturday and Sunday trips to present a conservative analysis.

The CalEEMod trip purposes (e.g., primary, pass-by) and default round trip lengths for an urban setting for Contra Costa County were used in this analysis. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet mix for Contra County was used for this analysis.

[20] Fehr & Peers. 2019. Final Transportation Impact Assessment, prepared for City of Pleasant Hill. January.

Architectural Coatings

Paints release VOC/ROG emissions during application and drying. The buildings would be repainted on occasion. The supplier that would likely serve the Civic Project and Residential Project would be required to comply with the BAAQMD Regulation 8, Rule 3—Architectural Coatings. This rule governs the manufacture, distribution, and sale of architectural coatings and limits the reactive organic gases content in paints and paint solvents.

Consumer Products

Consumer products are various solvents used in non-industrial applications, which emit VOCs during their product use. "Consumer Product" means a chemically formulated product used by household and institutional consumers, including but not limited to: detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. It does not include other paint products, furniture coatings, or architectural coatings.[21] The default emission factor developed for CalEEMod was used.

Landscape Equipment

CalEEMod was used to estimate the landscaping equipment emissions using the default assumptions in the model.

Electricity

Electricity usage (for lighting, etc.) would result in emissions from the power plants that would generate electricity distributed on the electrical power grid. Off-site electricity emissions estimates are used more pertinent for the analysis of GHG emissions. More detail describing assumptions used in estimating parameters specific to electricity is included in Section 3.6, GHG Emissions and Energy.

Natural Gas

Implementation of the proposed plan would generate emissions from the combustion of natural gas for water heaters, heat, etc. CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. The Title 24 uses are defined as the major building envelope systems covered by California's Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. Non-Title 24 includes everything else such as appliances and electronics. Total electricity consumption in CalEEMod is divided into the three categories. The percentage for each category is determined by using percentages derived from the CalEEMod default electricity intensity factors. The percentages are then applied to the electricity consumption to result in the values used in the analysis.

Construction- and Operation-related Toxic Air Contaminants

TACs are air pollutants in miniscule amounts in the air that, if a person is exposed to them, could increase the chances of experiencing health problems. Exposures to TAC emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. Construction-period TAC emissions could contribute to increased health risks to nearby residents or sensitive receptors.

[21] California Air Resources Board (ARB). 2011. Regulation for Reducing Emissions from Consumer Products. Website: www.arb.ca.gov/consprod/regs/fro%20consumer%20products%20regulation.pdf. Accessed May 1, 2017.

An assessment was made of the potential health impacts to surrounding sensitive receptors resulting from TAC emissions during construction. $PM_{2.5}$ health impacts are important, because their size can be deposited deeply in the lungs causing respiratory effects. For purposes of this analysis, exhaust emissions of DPM, are represented as exhaust emissions of $PM_{2.5}$. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

Odors

The impact analysis qualitatively evaluates the types of land uses proposed to evaluate whether major sources of anticipated odors would be present and, if so, whether those sources would likely generate objectionable odors. According to the BAAQMD's CEQA Air Quality Guidelines, a project that involves the siting of a new odor source would consider the screening level distances and the complaint history of the odor sources, described below. Projects that would site a new odor source farther than the screening-level distances provided in Table 3.2-12 would not likely result in a significant odor impact.

Table 3.2-12: BAAQMD Odor Screening-level Distances Thresholds

Land Use/Type of Operation	Plan Area Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 mile
Source: Bay Area Air Quality Management District (BAAQMD) 2017.	

Specific Thresholds of Significance

Consistency with Air Quality Plan

The applicable air quality plan is BAAQMD's 2017 Bay Area Clean Air Plan, which identifies measures to:

- Reduce emissions and reduce ambient concentrations of air pollutants; and
- Safeguard public health by reducing exposure to the air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution.

The proposed plan would be consistent with the Bay Area Clean Air Plan if it would support the plan's goals, include applicable control measures from the Bay Area Clean Air Plan, and would not disrupt or hinder implementation of any control measures from the Bay Area Clean Air Plan. Consistency with the Bay Area Clean Air Plan is the basis for determining whether the proposed plan would conflict with or obstruct implementation of an applicable air quality plan.

Ambient Air Quality (Criteria Pollutants)

Where available, the significance thresholds established by the applicable air quality management or air pollution control district may be relied upon to make the significance determinations. While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b), the BAAQMD recommends that its quantitative and qualitative air pollution thresholds be used to determine the significance of project-related emissions.

In June 2010, the BAAQMD adopted thresholds of significance to assist lead agencies in the review of projects under CEQA. These thresholds (see Table 3.2-13) were designed to establish the level at which the BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and included in the BAAQMD's current CEQA Guidelines (last updated May 2017).[22]

Table 3.2-13: BAAQMD Thresholds of Significance

Pollutant	Construction Thresholds Average Daily Emissions	Operational Thresholds	
		Average Daily Emissions	Annual Average Emissions
Criteria Air Pollutants			
ROG	54 pounds/day	54 pounds/day	10 tons/year
NO_X	54 pounds/day	54 pounds/day	10 tons/year
PM_{10}	82 pounds/day	82 pounds/day	15 tons/year
$PM_{2.5}$	54 pounds/day	54 pounds/day	10 tons/year
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

[22] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed September 22, 2018.

Table 3.2-13 (cont.): BAAQMD Thresholds of Significance

Pollutant	Construction Thresholds Average Daily Emissions	Operational Thresholds	
		Average Daily Emissions	Annual Average Emissions
Health Risks and Hazards for New Sources			
Excess Cancer Risk	Increase > 10.0 per one million	Increase > 10.0 per one million	
Chronic or Acute Hazard Index	Increase > 1.0	Increase > 1.0	
Incremental annual average $PM_{2.5}$	0.3 µg/m^3	0.3 µg/m^3	
Health Risks and Hazards for Sensitive Receptors (Cumulative from All Sources within 1,000-Foot Zone of Influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	> 100 per 1 million		
Chronic Hazard Index	> 10.0		
Annual Average $PM_{2.5}$	> 0.8 µg/m^3		

Notes:
ROG = reactive organic gases
NO_X = nitrogen oxides
PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 µm or less
$PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5 µm or less
Source: Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may 2017-pdf.pdf?la=en. Accessed September 22, 2018.

Health Risk (Toxic Air Contaminants)

The air quality-related health risk significance thresholds utilized for this assessment were derived from the BAAQMD significance thresholds as project-specific thresholds. These thresholds are:

- Cancer Risk: increased cancer risk of greater than 10 in one million
- Non-cancer Hazard Index: increased non-cancer risk of greater than 1.0
- Annual $PM_{2.5}$: increase greater than 0.3 µg/m^3

Odors

The significance thresholds for odor impacts are qualitative in nature. Specifically, an odor-generating source with five or more confirmed complaints in the new source area per year averaged over three years is considered to have a significant impact on receptors within the screening distances shown above under Approach to Analysis.

Impact Evaluation

Air Quality Management Plan Consistency

Impact AIR-1: The proposed plan could conflict with or obstruct implementation of the applicable air quality plan.

Construction and Operation

Civic Project and Residential Project

The SFBAAB is designated nonattainment for State standards for 1-hour and 8-hour ozone, 24-hour respirable particulate matter (PM_{10}), annual PM_{10}, and annual fine particulate matter ($PM_{2.5}$).[23] To address regional air quality standards, the BAAQMD has adopted several air quality policies and plans, and in April 2017, BAAQMD adopted their 2017 Clean Air Plan,[24] which serves as BAAQMD's most current regional Air Quality Plan (AQP) for the Air Basin for attaining federal ambient air quality standards. The primary goals of the 2017 Clean Air Plan are to protect public health and protect the climate. The 2017 Clean Air Plan acknowledges that the BAAQMD's two stated goals of protection are closely related. As such, the 2017 Clean Air Plan identifies a wide range of control measures intended to decrease both criteria pollutants[25] and GHGs.[26] The 2017 Clean Air Plan updates the BAAQMD's 2010 Clean Air Plan, pursuant to air quality planning requirements defined in the California Health and Safety Code.

The 2017 Clean Air Plan also accounts for projections of population growth provided by Association of Bay Area Governments and vehicle miles traveled provided by the Metropolitan Transportation Commission, and identifies strategies to bring regional emissions into compliance with federal and State air quality standards. A project would be judged to conflict with or obstruct implementation of the 2017 Clean Air Plan if it would result in substantial new regional emissions not foreseen in the air quality planning process.

The primary way of determining whether a project is consistent with the AQP's assumptions is to determine if the General Plan is consistent with the growth assumptions used in the AQPs for the Air Basin, and if the project is consistent with the applicable General Plan. As required by California law, city and county general plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and designates locations for land uses to regulate growth. The growth projections and land use information in adopted general plans, among other sources, is used to estimate future average daily trips and associated VMT, which are then provided to the BAAQMD to estimate future emissions in the AQPs. AQPs provide the amount of emission reductions required to reach attainment of the air standards based on the

[23] Bay Area Air Quality Management District (BAAQMD). 2017. Air Quality Standards and Attainment Status. January. Website: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed May 22, 2017.

[24] Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed May 24, 2017.

[25] The EPA has established National Ambient Air Quality Standards (NAAQS) for six of the most common air pollutants—carbon monoxide, lead, ground-level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide—known as "criteria" air pollutants (or simply "criteria pollutants").

[26] A greenhouse gas (GHG) is any gaseous compound in the atmosphere that is capable of absorbing infrared radiation, thereby trapping and holding heat in the atmosphere. By increasing the heat in the atmosphere, GHGs are responsible for the greenhouse effect, which ultimately leads to global warming.

projected growth in emissions, and include control measures required to achieve those reductions by the deadlines mandated by the Clean Air Act.

The applicable general plan for the proposed plan is the Pleasant Hill 2003 General Plan, which was adopted prior to the BAAQMD 2017 Clean Air Plan. The Pleasant Hill 2003 General Plan designates the plan area as semi-public and institutional, school-related, and mixed-use development. As shown an exhibit in Chapter 2, Project Descriptions, implementation of the proposed plan would require a general plan amendment to accommodate the General Plan land use designation changes.

Based on the land use designations for the plan area contained in the Pleasant Hill 2003 General Plan, emissions related to development of the plan area would have been included in growth forecasts for the BAAQMD 2017 Clean Air Plan as semi-public and institutional, school-related, and mixed-use development. Because the proposed plan would not fit within the current land use designation contained within the Pleasant Hill 2003 General Plan, additional analysis is required to determine if the implementation of the proposed plan would conflict with or obstruct implementation of the applicable air quality plan.

The BAAQMD does not provide a numerical threshold of significance for project-level consistency analysis. Therefore, the following criteria were used for determining a project's consistency with the AQP.

- **Criterion 1:** Does the project support the primary goals of the AQP?
- **Criterion 2:** Does the project include applicable control measures from the AQP?
- **Criterion 3:** Does the project disrupt or hinder implementation of any AQP control measures?

Criterion 1

The primary goals of the 2017 Clean Air Plan (CAP), the current AQP to date, are to:

- Attain air quality standards;
- Reduce population exposure to unhealthy air and protecting public health in the Bay area; and
- Reduce GHG emissions and protect the climate.

As discussed under Impact AIR-2, the implementation of the proposed plan would not result in project- or cumulative-level net increase of any criteria air pollutant with implementation of Mitigation Measure (MM) AIR-2. As discussed under Impact AIR-3, the proposed plan would not expose sensitive receptors to substantial pollutant concentrations with implementation of MM AIR-2 and MM AIR-3. Therefore, the proposed plan would support the goals of attaining air quality standards and reducing population exposure to unhealthy air. A detailed analysis of impacts as they relate to GHG emissions and climate are included in Section 3.6, GHG Emissions and Energy. As discussed in Section 3.6, plan- and cumulative-level GHG emissions impacts would be less than significant with implementation of MM GHG-1. As discussed below under Criterion 2, the proposed plan would provide pedestrian connectivity and access to transit. Considering this information and considering the mixed-use nature of the proposed plan, it would support the overall goals of the 2017 Clean Air Plan. The proposed plan is, therefore, consistent with Criterion 1 with implementation of MM AIR-2, MM AIR-3, and MM GHG-1.

Criterion 2

The 2017 Clean Air Plan contains 85 control measures aimed at reducing air pollutant emissions and GHG emissions at the local, regional, and global levels. Along with the traditional stationary, area, mobile source, and transportation control measures, the 2017 Clean Air Plan contains a number of control measures designed to protect the climate, promote mixed use, and to compact development to reduce vehicle emissions and exposure to pollutants from stationary and mobile sources. The 2017 Clean Air Plan also includes an account of the implementation status of control measures identified in the 2010 Clean Air Plan.

Table 3.2-14 lists the Clean Air Plan policies relevant to the proposed plan and evaluates the proposed plan's consistency with the policies. As shown below, the proposed plan would be consistent with the applicable measures.

Table 3.2-14: Clean Air Plan Control Measures Consistency Analysis

Control Measure	Plan Consistency
Buildings Control Measures	
BL1: Green Buildings	**Consistent.** As discussed in more detail in Section 3.6, Greenhouse Gas Emissions and Energy, the proposed plan would comply with the California Energy Code and, thus, incorporate applicable energy efficiency features designed to reduce energy consumption associated with the proposed plan.
BL4: Urban Heat Island Mitigation	**Consistent.** The proposed plan would incorporate landscaping (including trees) throughout the plan area. The proposed plan would provide landscaping in accordance with City standards that would serve to reduce the urban heat island effect and include the planting of shade trees. A detailed breakdown of the proposed pervious and impervious surfaces is provided in Chapter 2, Project Descriptions.
Energy Control Measures	
EN2: Decrease Electricity Demand	**Consistent.** The design of the Civic Project and Residential Project would be required to conform to the energy efficiency requirements of the California Building Standards Code, also known as Title 24, which was adopted in order to meet an executive order in the Green Building Initiative to improve the energy efficiency of buildings through aggressive standards. The 2016 Building Efficiency Standards are the current regulations and went into effect on January 1, 2017. The 2019 Title 24 Standards are scheduled to go into effect on January 1, 2020. For the purposes of analysis in this EIR, construction was assumed to begin in September 2019 and would be subject to the 2016 Title 24 Standards; however, proposed buildings that would receive building permits after January 1, 2020 would be subject to the 2019 Title 24 Standards. One of the notable changes in the 2019 Title 24 Standards includes the solar photovoltaic systems requirement for new low-rise residential homes.

Table 3.2-14 (cont.): Clean Air Plan Control Measures Consistency Analysis

Control Measure	Plan Consistency
Natural and Working Lands Control Measures	
NW2: Urban Tree Planting	**Consistent.** The proposed plan would incorporate landscaping (including trees) throughout the plan area. The proposed plan would provide landscaping in accordance with City standards that would include the planting of trees.
WA3: Green Waste Diversion	**Consistent.** The waste service provider for the Civic Project and Residential Project would be required to meet AB 341, SB 939, and SB 1374 requirements that require waste service providers to divert green waste away from landfills. All plant refuse generated during operations of the proposed plan would be recycled off site.
WA4: Recycling and Waste Reduction	**Consistent.** The waste service provider for the Civic Project and Residential Project would be required to meet AB 341, SB 939, and SB 1374 requirements that require waste to be recycled.
Stationary Control Measures	
SS36: Particulate Matter from Trackout	**Consistent with Mitigation.** Mud and dirt that may be tracked out onto nearby public roads during construction activities would be removed promptly by the contractor based on BAAQMD requirements. MM AIR-2, identified under Impact AIR-2, would implement BMPs recommended by BAAQMD for fugitive dust emissions during construction.
Transportation Control Measures	
TR9: Bicycle and Pedestrian Access and Facilities.	**Consistent.** Both the Civic Project and Residential Project would enhance pedestrian access connections within and adjacent to the plan area. For instance, the Civic Project would include a new pedestrian trail along the eastern portion of the site that would connect to the proposed park, proposed library, and off-site EBMUD trail. In addition, Class I and Class III Bike Paths are located near the plan area. Specifically, a Class I Multi-Use Path is located immediately east of the Civic Project along the off-site adjacent EBMUD Trail. A Class III Bike Route runs along Oak Park Boulevard and connects to surrounding off-site bicycle infrastructure (bicycle paths, lanes, routes, and protected paths) connecting to the EBMUD Trail and a Class II bike lane on Patterson Boulevard. With these proposed enhancements to pedestrian connectivity in addition to the plan area's proximity to existing bicycle facilities, the proposed plan would be consistent with the BAAQMD effort to encourage planning for bicycle and pedestrian facilities.
Source: Compiled by FirstCarbon Solutions (FCS) in 2019.	

In summary, the implementation of the proposed plan would not conflict with applicable measures under the 2017 Clean Air Plan with the implementation of MM AIR-2, therefore; the proposed plan would be consistent with Criterion 2 with implementation of MM AIR-2.

Criterion 3

In addition to being located near planned and existing pedestrian and bicycle facilities. Bus stops serving County Connection Route 9 are located along Oak Park Boulevard and along Patterson Boulevard, approximately 0.22 mile west of the plan area. Route 9 provides services from Diablo Valley College to Pleasant Hill Bay Area Rapid Transit (BART) Station, located at 1365 Treat Boulevard, on the east side of Interstate 680 (I-680) near the Treat Boulevard interchange. Future residents, visitors, and employees would have easy access to existing public transit, as well as pedestrian and bicycle facilities. Because the proposed plan includes a mix of uses that would provide pedestrian connectivity and access to transit, implementation of the proposed plan would support the overall goals of the 2017 Clean Air Plan. Furthermore, the proposed plan would comply with applicable BAAQMD rules and regulations listed above under Regulatory Framework during construction and operations. Considering this information, the proposed plan would not create an impediment or disruption to implementation of any AQP control measures. The proposed plan is, therefore, consistent with Criterion 3.

Overall

Overall, the proposed plan would be consistent with the three criteria for evaluating consistency with the 2017 Clean Air Plan after incorporation of MM AIR-2, MM AIR-3, and MM GHG-1. Therefore, the proposed plan would not conflict with or obstruct implementation of the applicable air quality plan. The impact related to air quality management plan consistency would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

Implement MM AIR-2, MM AIR-3, and MM GHG-1 (Civic Project and Residential Project)

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Cumulative Criteria Pollutant Emissions

Impact AIR-2:	**The proposed plan could result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment under an applicable federal or state ambient air quality standard.**

In developing thresholds of significance for criteria air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively significant. As such, if a project exceeds the identified thresholds of significance, its emissions would be significant in terms of both project- and cumulative-level impacts, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Thus, this impact analysis and discussion is

related to the project- and cumulative-level effect of the Civic Project's and Residential Project's regional criteria air pollutant emissions.

The region is non-attainment for the federal and State ozone standards, the State PM_{10} standards, and the federal and State $PM_{2.5}$ standards. Potential impacts would result in exceedances of State or federal standards for NO_X or particulate matter (PM_{10} and $PM_{2.5}$). NO_X emissions are of concern because of potential health impacts from exposure to NO_X emissions during both construction and operation and as a precursor in the formation of airborne ozone. PM_{10} and $PM_{2.5}$ are of concern during construction, because of the potential to emit exhaust emissions from the operation of off-road construction equipment and fugitive dust during earth-disturbing activities (construction fugitive dust).

ROG emissions are also important, because of their participation in the formation of airborne ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children.

By its nature, air pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The nonattainment status of regional pollutants is a result of past and present development within the air basin, and this regional impact is a cumulative impact. In other words, new development projects (such as the Civic Project and Residential Project) within the air basin would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively significant when taken in combination with past, present, and future development projects.

The cumulative analysis focuses on whether a specific project would result in cumulatively significant emissions. According to Section 15064(h)(4) of the CEQA Guidelines, the existence of significant cumulative impacts caused by other projects alone does not constitute substantial evidence that the Civic Project's and Residential Project's incremental effects would be cumulatively significant. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the Civic Project and Residential Project would result in regional emissions that exceed the BAAQMD regional thresholds of significance for construction and operations on a project level. The thresholds of significance represent the allowable amount of emissions each project can generate without generating a cumulatively significant contribution to regional air quality impacts. Therefore, a project that would not exceed the BAAQMD thresholds of significance on the project level also would not be considered to result in a cumulatively significant impact with regard to regional air quality and would not be considered to result in a significant impact related to cumulative regional air quality.

Construction

Civic Project and Residential Project

Construction activities associated with development of the Civic Project and Residential Project contemplated by the proposed plan would include demolition, site preparation, grading, paving, building construction, and painting. During construction, fugitive dust (PM_{10} and $PM_{2.5}$) would be

generated from site grading and other earth-moving activities. The majority of this fugitive dust would remain localized and would be deposited near the plan area. However, the potential for impacts from fugitive dust exists unless control measures are implemented to reduce the emissions from this source. Exhaust emissions would also be generated from the operation of the off-road construction equipment, as shown in Table 3.2-13.

Construction Fugitive Dust

Construction would require general site clearing and grading/earthwork activities. Emissions from construction activities are generally short-term in duration, but may still cause adverse air quality impacts. The Civic Project and Residential Project would generate emissions from construction equipment exhaust, worker travel, and fugitive dust as PM_{10} and $PM_{2.5}$. PM is of concern during construction because of the potential to emit fugitive dust during earth-disturbing activities (construction fugitive dust). The BAAQMD does not have a quantitative significance threshold for fugitive dust. The BAAQMD's Air Quality Guidelines recommend that projects determine the significance for fugitive dust through application of BMPs. The Civic Project and Residential Project do not currently include any dust control measures. As such, this represents a significant cumulative construction impact related to criteria air pollutant emissions.

However, per MM AIR-2, the fugitive dust control measures identified in the BAAQMD's Air Quality Guidelines would be required to be implemented during construction of the Civic Project and Residential Project in order to reduce localized dust impacts. Therefore, with implementation of MM AIR-2, cumulative construction impacts associated with violating an air quality standard or contributing substantially to an existing or projected air quality violation in terms of criteria air pollutant emissions specific to fugitive dust would be less than significant with mitigation.

Construction Emissions: ROG, NO_X, PM_{10} (exhaust), $PM_{2.5}$ (exhaust)

As described above under Approach to Analysis, CalEEMod was used to estimate the Civic Project's and Residential Project's construction emissions. Estimated construction emissions are compared with the applicable thresholds of significance established by the BAAQMD to assess ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$ construction emissions to determine significance for this criterion.

As shown in Table 3.2-9, for the purpose of analysis in this EIR, construction of the Civic Project and Residential Project is anticipated to begin as early as September 2, 2019 and continue through July 31, 2021. The construction schedule used in the analysis represents a "worst-case" analysis scenario since a delay in construction dates into the future would result in using emission factors for construction equipment that decrease as the analysis year increases, due to improvements in technology and the need to meet more stringent regulatory requirements. Therefore, construction emissions would decrease if the construction schedule moves to later years. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet. The construction emissions modeling parameters and assumptions are summarized above under Approach to Analysis, and the complete modeling results are provided in Appendix C. Annual construction emissions are shown by source, converted to average daily construction emissions, and are compared with the applicable significance thresholds in Table 3.2-15.

Table 3.2-15: Proposed Plan Construction Annual and Daily Average Emissions (Unmitigated)

Construction Activity	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Demolition Phase of Construction				
Demolition	0.04	0.59	0.02	0.02
Phase I Construction				
Site Preparation—2019	0.20	2.11	0.10	0.09
Site Preparation—2020	0.08	0.86	0.04	0.04
Paving	0.01	0.04	0.00	0.00
Grading	0.21	2.22	0.09	0.09
Phase II Construction				
Paving	0.02	0.15	0.01	0.01
Building Construction—2020	0.21	2.05	0.09	0.09
Building Construction—2021	0.10	1.01	0.04	0.04
Architectural Coating	0.98	0.02	0.00	0.00
Phase III				
Site Preparation	0.01	0.10	0.01	0.00
Building Construction	0.03	0.27	0.01	0.01
Architectural Coating	0.03	0.01	0.00	0.00
Paving	0.02	0.19	0.01	0.01
All Construction Activities (2019–2021)				
Total Construction Emissions	1.97	9.64	0.43	0.40
Parameter	**Air Pollutants**			
	ROG	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**
Total Proposed Plan Construction Emissions (tons/year)	1.97	9.64	0.43	0.40
Total Proposed Plan Construction Emissions (lbs/year)	3,931	19,287	869	806
Average Daily Proposed Plan Emissions (lbs/day)[1]	*6.55*	*32.15*	*1.45*	*1.34*
BAAQMD Average Daily Construction Emission Thresholds (lbs/day)	**54**	**54**	**82**	**54**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**

Notes:
[1] The average daily construction emissions were estimated based on the total annual emissions divided by the number of working days (600 total working days for the Oak Park Properties Specific Plan).
lbs = pounds ROG = reactive organic gases NO_X = oxides of nitrogen
PM_{10} = particulate matter 10 microns in diameter $PM_{2.5}$ = particulate matter 2.5 microns in diameter
All calculation Totals may not appear to add exactly due to rounding.
Source of thresholds: BAAQMD CEQA Guidelines 2017.
Source of Emissions: CalEEMod Output (Appendix C).

As shown in Table 3.2-15, construction emissions would not exceed the BAAQMD's recommended thresholds of significance with regard to emissions of ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$. Therefore, cumulative construction impacts associated with violating an air quality standard or contributing substantially to an existing or projected air quality violation in terms of criteria air pollutant emissions specific to ROG, NO_X, PM_{10}, and $PM_{2.5}$ would be less than significant.

Operation

Civic Project and Residential Project

Operational Emissions: ROG, NO_X, PM_{10}, PM 2.5

Operational pollutants of concern include ROG, NO_X, PM_{10}, and $PM_{2.5}$. Operational emissions are those emissions that occur when a project commences operations. To provide a conservative analysis, operations were analyzed assuming that the first year of operation of the Civic Project and Residential Project would be in 2021. The total daily trips associated with proposed and existing land uses are consistent with those presented in the transportation impact assessment included in Appendix J.[27] Vehicle trips and associated emissions from the existing library were included in the baseline. The CalEEMod default trip lengths for an urban setting in Contra Costa County[28] were used in this analysis of vehicle emissions. The major sources for operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ were shown above under Approach to Analysis. The operational emissions for the respective pollutants were calculated using CalEEMod. Existing emissions associated with the 37,364-square-foot library on the Residential Project site are shown in Table 3.2-8. Net annual operational emissions estimated for the Civic Project and Residential Project are shown by source and are compared with the applicable significance thresholds in Table 3.2-16. The net average daily operational-related emissions for the Civic Project and Residential Project are compared with the applicable significance thresholds in Table 3.2-17.

Table 3.2-16: Proposed Plan Operation Annual Emissions (Unmitigated)

Emission Source	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area	0.68	0.01	0.00	0.00
Energy	0.01	0.10	0.01	0.01
Mobile	0.69	2.95	1.84	0.51
Total Proposed Plan Operational Emissions	*1.38*	*3.05*	*1.85*	*0.52*
Existing Emissions[1]	0.52	1.53	0.92	0.01
Net Proposed Plan Operational Emissions	**0.86**	**1.52**	**0.93**	**0.51**
BAAQMD Maximum Annual Emission Threshold	**10**	**10**	**15**	**10**
Exceeds thresholds?	**No**	**No**	**No**	**No**

[27] Fehr & Peers. 2019. Oak Park/Monticello Specific Plan Final Transportation Impact Assessment, prepared for City of Pleasant Hill. January.
[28] Note that the CalEEMod setting is limited to the county level, so there is no option to select a city.

Table 3.2-16 (cont.): Proposed Plan Operation Annual Emissions (Unmitigated)

Emission Source	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Notes: [1] Existing emissions are shown in Table 3.2-8. ROG = reactive organic gases NO_X = oxides of nitrogen PM_{10} = particulate matter 10 microns in diameter $PM_{2.5}$ = particulate matter 2.5 microns in diameter Source of emissions: CalEEMod Output (Appendix C).				

Table 3.2-17: Proposed Plan Operation Average Daily Emissions (Unmitigated)

Parameters	Average Daily Emissions (pounds/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Net Annual Emissions[1] (tons/year)	0.86	1.52	0.93	0.51
Net Annual Emissions[2] (lbs/year)	1,712	3,045	1,865	1,010
Net Average Daily Emissions[3] (lbs/day)	4.69	8.34	5.11	2.77
BAAQMD Average Daily Emission Thresholds (lbs/day)	**54**	**54**	**82**	**54**
Exceeds thresholds?	**No**	**No**	**No**	**No**
Notes: [1] Proposed plan emissions are shown in Table 3.2-16. [2] Pounds per year were calculated using the unrounded annual plan emissions. [3] The average daily construction emissions were estimated based on the total annual emissions divided by the number of days in 2021 (365 days). ROG = reactive organic gases NO_X = oxides of nitrogen PM_{10} = particulate matter 10 microns in diameter $PM_{2.5}$ = particulate matter 2.5 microns in diameter Source of emissions: CalEEMod Output (Appendix C).				

As shown in Table 3.2-16 and Table 3.2-17, the implementation of the Civic Project and Residential Project would not result in operational-related air pollutants or precursors that would exceed BAAQMD's thresholds of significance, indicating that on-going operation would not be considered to have the potential to generate a significant quantity of air pollutants. Therefore, cumulative operational impacts associated with violating an air quality standard or contributing substantially to an existing or projected air quality violation in terms of criteria air pollutant emissions would be less than significant.

Level of Significance Before Mitigation

Potentially Significant for plan- and cumulative-level construction impacts (Civic Project and Residential Project)

Mitigation Measures

MM AIR-2 Implement BAAQMD Best Management Practices During Construction

Civic Project and Residential Project: The following Best Management Practices (BMPs), as recommended by the BAAQMD, shall be included in the design of the Civic Project and Residential Project and implemented during construction:

- All active construction areas shall be watered at least two times per day.
- All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or non-toxic soil stabilizers shall be applied to exposed non-paved surfaces.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered and/or shall maintain at least 2 feet of freeboard.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage regarding idling restrictions shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- The prime construction contractor shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The City of Pleasant Hill and the construction contractor shall take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Sensitive Receptors Exposure to Toxic Air Contaminant Concentrations

Impact AIR-3: The proposed plan could expose sensitive receptors to substantial pollutant concentrations.

This impact addresses whether the implementation of the Civic Project and Residential Project would expose air pollution sensitive receptors to TACs such as construction-related asbestos disturbance, construction-generated fugitive dust (PM_{10} and $PM_{2.5}$), construction-related TACs, construction-generated DPM, operational-related TACs, or operational CO hotspots.

Because the proposed plan would result in the development of a variety of land uses that would include residential and park uses, the Civic Project and Residential Project would be considered air pollution sensitive receptors once operational. Grading activities and site preparation activities that would generate the greatest amount of emissions during construction would not overlap with operation. Most emissions during construction are generated during the site preparation and grading phases when heavy equipment is used to prepare the land for construction. Construction of the proposed library and infrastructure improvements are anticipated to start as early as April 2020 and finish in the fall of 2021. Construction of the proposed new athletic fields is anticipated to start in the fall of 2020 and finish in the fall of 2021, respectively. For the purposes of presenting a conservative analysis in this EIR, it is assumed that construction would start in Fall 2019. Construction of the Residential Project is anticipated to start in June 2020 and finish in the summer of 2022.

For the purpose of analysis in this EIR, operations of the proposed single-family homes in the Residential Project and proposed park in the Civic Project could overlap with construction activities that would occur in Spring 2021 through Summer 2021, when little or no grading would occur. Construction activities during this time would primarily include home building, paving, and landscaping. Limited amounts of diesel equipment are used during home construction, which would not contribute substantially to the health risk during construction. Therefore, for the purposes of the health risk assessment, sensitive receptors associated with proposed residences and park were not included as part of the construction health risk assessment. The closest sensitive receptors in the vicinity of the plan area include single-family residential buildings located immediately south of Oak Park Boulevard and east of the plan area.

Construction

Residential Project

Construction Asbestos Exposure

Asbestos from Demolition

The existing library and vacant administrative offices contain asbestos containing materials.[29] The Residential Project includes demolition of on-site buildings and the removal of existing surfaces. Demolition of existing buildings or structures would be subject to BAAQMD Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), which is intended to limit asbestos emissions from demolition or renovation of structure and the associated disturbance of asbestos-containing waste material generated or handled during these activities. The rule addresses the national emissions standards for asbestos along with some additional requirements. The rule requires the Lead Agency and its contractors to notify the BAAQMD of any regulated renovation or demolition activity. This notification includes a description of structures and methods utilized to determine whether asbestos-containing materials are potentially present. All asbestos-containing material found on the site must be removed prior to demolition or renovation activity in accordance with BAAQMD Regulation 11, Rule 2, including specific requirements for surveying, notification, removal, and disposal of asbestos-containing materials. Therefore, projects that comply with BAAQMD Regulation 11, Rule 2 would ensure that asbestos-containing materials would be removed and disposed of appropriately and safely. By complying with BAAQMD Regulation 11, Rule 2, and

[29] Stock Environmental Inc. (prepared for Environmental Assessment Specialist, Inc.). 2019. Asbestos and Lead Based Paint Sampling Report. March 22.

thereby minimizing the release of airborne asbestos emissions, demolition activity would not result in a significant impact related to air quality or the exposure of sensitive receptors to substantial pollutant concentrations.

As discussed in Section 3.7, Hazards, Hazardous materials, and wildfire, the asbestos-containing material and lead based paint survey conducted in March 2019 determined that the existing library and vacant administrative offices contains both asbestos-containing materials and lead based paint. The impacts and mitigation related to the removal of these materials is discussed in Impact HAZ-2.

Civic Project and Residential Project

Naturally Occurring Asbestos

Construction in areas of rock formations that contain naturally occurring asbestos could release asbestos into the air and pose a health hazard. A review of the map containing areas more likely to have rock formations containing naturally occurring asbestos in California indicates that there are no areas likely containing naturally occurring asbestos in the immediate vicinity of the plan area.[30] Therefore, it can be reasonably concluded that the implementation of the proposed plan would not expose sensitive receptors to naturally occurring asbestos during construction. Impacts would be less than significant.

Construction Fugitive Dust

Construction activities associated with development contemplated in the proposed plan would include demolition, site preparation, grading, building construction, paving, and architectural coating. Generally, the most substantial air pollutant emissions would be dust generated from site grading. If uncontrolled, these emissions could lead to both health and nuisance impacts. Construction activities would also temporarily create emissions of equipment exhaust and other air contaminants.

The BAAQMD does not recommend a numerical threshold for fugitive, dust-related particulate matter emissions. Instead, the BAAQMD bases the determination of significance for fugitive dust on a consideration of the control measures to be implemented. If all appropriate emissions control measures recommended by the BAAQMD are implemented, then fugitive dust emissions during construction are not considered significant. MM AIR-2 includes the fugitive dust control measures recommended by the BAAQMD, thereby reducing this impact to less than significant.

Construction Toxic Air Contaminants

A Health Risk Assessment (HRA) is a guide that helps to determine whether current or future exposures to a chemical or substance in the environment could affect the health of a population. In general, risk depends on the following factors:

- Identify the TACs that may be present in the air;
- Estimate the amount of TACs released from all sources, or the source of particular concern, using air samples or emission models;

[30] United States Geological Survey (USGS). 2011. Van Gosen, B.S., and Clinkenbeard, J.P. California Geological Survey Map Sheet 59. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California. Open-File Report 2011-1188 Website: http://pubs.usgs.gov/of/2011/1188/. Accessed December 2017.

- Estimate concentrations of TACs in air in the geographic area of concern by using dispersion models with information about emissions, source locations, weather, and other factors; and
- Estimate the number of people exposed to different concentrations of the TAC at different geographic locations.

During construction, the Civic Project and Residential Project would result in the emissions of TACs that could potentially impact nearby sensitive receptors. TACs are the air pollutants of most concern as it relates to sensitive receptors, as they have the greatest potential to pose a carcinogenic and non-carcinogenic (such as asthma and bronchitis) hazard to human health. The BAAQMD has defined health risk significance thresholds as discussed under Specific Thresholds of Significance above. These thresholds are represented as a cancer risk to the public and a non-cancer hazard from exposures to TACs. Cancer risk represents the probability (in terms of risk per million individuals) that an individual would contract cancer resulting from exposure to TACs continuously over a period of several years.

Construction DPM Emissions

DPM has been identified by the ARB as a carcinogenic substance. The principal TAC emission analyzed in this assessment was DPM from the operation of off-road equipment and diesel-powered delivery and worker vehicles during construction. For purposes of this analysis, DPM is represented as exhaust emissions of $PM_{2.5}$. For the purpose of the analysis in this EIR, construction of the Civic Project and Residential Project is anticipated to begin as early as September 2019 and continue through July 2021. Construction assumptions are summarized above under Approach to Analysis.

Construction DPM emissions (as $PM_{2.5}$ exhaust) and total $PM_{2.5}$ ($PM_{2.5}$ exhaust and $PM_{2.5}$ fugitive dust) were estimated using CalEEMod (version 2016.3.2) and are summarized in Table 3.2-18 below.

Table 3.2-18: Proposed Plan Construction DPM (as $PM_{2.5}$ Exhaust) and Total $PM_{2.5}$ Emissions

Parameter	On-site DPM (grams/sec)	Off-site DPM (grams/sec)	On-site Total $PM_{2.5}$ (grams/sec)	Off-site Total $PM_{2.5}$ (grams/sec)
Annual Average Construction Emissions (No Mitigation)				
Unmitigated Emissions	1.628E-02	1.357E-05	3.117E-02	1.658E-04
Annual Construction Emissions (Tier IV Interim Mitigation)				
Mitigated Emissions	1.762E-03	1.357E-05	1.664E-02	1.658E-04
Note: Source: CalEEMod and FirstCarbon Solutions (FCS), see Appendix C.				

Estimation of Cancer Risks

The BAAQMD has developed a set of guidelines for estimating cancer risks that provide adjustment factors that emphasize the increased sensitivities and susceptibility of young children to exposures

to TACs.[31] These adjustment factors include age-sensitivity weighting factors, age-specific daily breathing rates, and age-specific time-at-home factors. The recommend method for the estimation of cancer risk is shown in the equations below with the cancer risk adjustment factors provided in Table 3.2-19 for several types of sensitive/residential receptors (infant, child, and adult).

$$\text{Cancer Risk} = C_{DPM} \times \text{Inhalation Exposure Factor} \quad \text{(EQ-1)}$$

Where:

Cancer Risk = Total individual excess cancer risk defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular source for specified exposure durations; this risk is defined as an excess risk because it is above and beyond the background cancer risk to the population; cancer risk is expressed in terms of risk per million exposed individuals.

C_{DPM} = Period average DPM air concentration calculated from the air dispersion model in $\mu g/m^3$

Inhalation is the most important exposure pathway to impact human health from DPM and the inhalation exposure factor is defined as follows:

$$\text{Inhalation Exposure Factor} = \text{CPF} \times \text{EF} \times \text{ED} \times \text{DBR} \times \text{AAF/AT} \quad \text{(EQ-2)}$$

Where:

CPF = Inhalation cancer potency factor for the TAC: 1.1 $(mg/kg\text{-}day)^{-1}$ for DPM
EF = Exposure frequency (days/year)
ED = Exposure duration (years of construction)
AAF = set of age-specific adjustment factors that include age sensitivity factors (ASF), daily breathing rates (DBR), and time at home factors (TAH)—see Table 3.2-19
AT = Averaging time period over which exposure is averaged (days)

The California Office of Environmental Health Hazards Assessment (OEHHA)-recommended values for the various cancer risk parameters shown in EQ 2, above, are provided in Table 3.2-19.

Table 3.2-19: Exposure Assumptions for Cancer Risk

Receptor Type	Exposure Frequency		Exposure Duration (years)	Age Sensitivity Factors	Time at Home Factor (%)	Daily Breathing Rate[(1)] (l/kg-day)
	Hours/day	Days/year				
Sensitive/Residential—Infant						
3rd Trimester	24	350	0.25	10	85	361
0–2 years	24	350	1.66	10	85	1,090

[31] Bay Area Air Quality Management District (BAAQMD) 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en.

Table 3.2-19 (cont.): Exposure Assumptions for Cancer Risk

Receptor Type	Exposure Frequency		Exposure Duration (years)	Age Sensitivity Factors	Time at Home Factor (%)	Daily Breathing Rate[(1)] (l/kg-day)
	Hours/day	Days/year				
Sensitive Receptor—Child						
3–16 years	24	350	1.91	3	72	572
Sensitive Receptor—Adult						
> 16 to 30 years	24	350	1.91	1	73	261

Notes:
(1) The daily breathing rates recommended by the BAAQMD for sensitive/residential receptors assume the 95th percentile breathing rates for all individuals less than 2 years of age and 80th percentile breathing rates for all older individuals.
(l/kg-day) = liters per kilogram body weight per day
Source: Bay Area Air Quality Management District (BAAQMD). 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en

Estimation of Non-cancer Chronic Hazards

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor concentration of each chemical compound with the appropriate reference exposure level (REL). Available RELs promulgated by the OEHHA were considered in the assessment.

Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI). The HI is a ratio of the predicted concentration of a project's emissions to a concentration considered acceptable to public health professionals, termed the REL.

To quantify non-carcinogenic impacts, the hazard index approach was used.

$$HI = C_{ann}/REL \qquad \text{(EQ-3)}$$

Where:

HI = chronic hazard index
C_{ann} = annual average concentration of TAC as derived from the air dispersion model ($\mu g/m^3$)
REL = reference exposure level above which a significant impact is assumed to occur ($\mu g/m^3$)

The hazard index assumes that chronic exposures to TACs adversely affect a specific organ or organ system (toxicological endpoint) of the body. For each discrete chemical exposure, target organs presented in regulatory guidance were used. To calculate the hazard index, each chemical concentration or dose is divided by the appropriate toxicity REL. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds 1, a health hazard is presumed to exist. For purposes of this assessment, the TAC of concern is DPM, for which the

OEHHA has defined a REL for DPM of 5 µg/m^3. The principal toxicological endpoint assumed in this assessment was through inhalation.

Air Dispersion Modeling Results

An air dispersion model is a mathematical formulation used to estimate the air quality impacts at specific locations (receptors) surrounding a source of emissions given the rate of emissions and prevailing meteorological conditions. The air dispersion model applied in this assessment was the EPA American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD version 18081) air dispersion model that is approved by the BAAQMD for air dispersion assessments. Specifically, the AERMOD model was used to estimate levels of air emissions at sensitive receptor locations from the Civic Project and Residential Project construction DPM (as $PM_{2.5}$ exhaust) emissions. The use of the AERMOD model provides a refined methodology for estimating construction impacts by utilizing long-term, measured representative meteorological data and a representative construction schedule.

Terrain elevations were obtained using the AERMAP model, the AERMOD terrain data pre-processor. The urban dispersion option was used to describe the air dispersion in the local vicinity of the plan area. The air dispersion model assessment used meteorological data from the Metropolitan Oakland International Airport, which is approximately 17 miles southwest of the plan area.

Receptor locations within the AERMOD model were placed at locations of existing residences and schools surrounding the plan area. To evaluate localized construction impacts, sensitive receptor height should be taken into account at the point of maximum impact. The emissions from the on-site construction exhaust source were assumed to be emitted at a height of 5 meters above ground to account for the top of the equipment exhaust stack where the emissions are released to the atmosphere and the increase in the height of the emissions due to its heated exhaust. The off-site construction vehicle emissions were represented in the AERMOD model as line volume sources with a release height of 3.1 meters for the DPM vehicles. The off-site vehicles were assumed to travel from eastward along Oak Park Boulevard towards Main Street for access to I-680.

The estimated health and hazard impacts from construction emissions at the maximum impacted sensitive receptor (MIR) are provided in Table 3.2-20. The estimates shown in Table 3.2-20 and Table 3.2-21 include application of BMPs recommended by the BAAQMD, as required by MM AIR-2.

Table 3.2-20: Proposed Plan Construction Health Risks and Hazards (Unmitigated)

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index[(2)]	Annual $PM_{2.5}$ Concentration (µg/m^3)
Risks and Hazards at the MIR: Infant[(1)]	41.0	0.03	0.32
Risks and Hazards at the MIR: Child[(1)]	6.0	0.03	0.32
Risks and Hazards at the MIR: Adult[(1)]	0.9	0.03	0.32
BAAQMD Significance Threshold	**10.0**	**1.0**	**0.3**
Exceeds Individual Source Threshold?	**Yes**	**No**	**Yes**

Table 3.2-20 (cont.): Proposed Plan Construction Health Risks and Hazards (Unmitigated)

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index[(2)]	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Notes: MIR = maximum impacted sensitive receptor [1] The MIR is a residence located approximately 160 feet east of the plan area, off Saint Lawrence Way. [2] Chronic non-cancer hazard index was estimated by dividing the annual average DPM concentration (as $PM_{2.5}$ exhaust) by the REL of 5 $\mu g/m^3$. Source: FirstCarbon Solutions (FCS) and CalEEMod, see Appendix C.			

As noted from Table 3.2-20, construction of the Civic Project and Residential Project would exceed two of the three applicable BAAQMD thresholds prior to the application of mitigation beyond that required by MM AIR-2. Specifically, the DPM concentration during construction of the Civic Project and Residential Project would exceed the applicable cancer risk significance threshold at the MIR for the infant scenario, and the annual total $PM_{2.5}$ concentration during construction would exceed the applicable annual $PM_{2.5}$ concentration significance threshold at the MIR. This would represent a potentially significant construction TACs exposure impact.

However, MM AIR-3 requires the project sponsors to provide documentation to the City of Pleasant Hill that all off-road diesel-powered construction equipment greater than 50 horsepower meets EPA or ARB Tier IV Interim off-road emissions standards. Tier IV standards require that NO_X and PM emission rates (grams per brake horsepower-hour), the prime targets of the federal "Tier" regulations, be reduced by approximately 90 percent compared to Tier III emission standards.[32] Table 3.2-21 shows the health risks and non-cancer hazard index for construction with implementation of Tier IV Interim mitigation, as required by MM AIR-3.

Table 3.2-21: Proposed Plan Construction Health Risks and Hazards (Mitigated)

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index[(2)]	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Risks and Hazards at the MIR: Infant[(1)]	4.4	0.004	0.17
Risks and Hazards at the MIR: Child[(1)]	0.6	0.004	0.17
Risks and Hazards at the MIR: Adult[(1)]	0.1	0.004	0.17
BAAQMD Significance Threshold	**10.0**	**1.0**	**0.3**
Exceeds Individual Source Threshold?	**No**	**No**	**No**
Notes: MIR = maximum impacted sensitive receptor [1] The MIR is a residence located approximately 160 feet east of the plan area, off St Lawrence Way. [2] Chronic non-cancer hazard index was estimated by dividing the annual average DPM concentration (as $PM_{2.5}$ exhaust) by the REL of 5 $\mu g/m^3$. Source: FirstCarbon Solutions (FCS) and CalEEMod, see Appendix C.			

[32] California Air Resources Board (ARB). 2018. Non-road Diesel Engine Certification Tier Chart. Website: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart-pdf.

Overall

Overall, the construction sensitive receptors exposure to TACs impact would be less than significant with mitigation.

Operation

Civic Project and Residential Project

Operational Toxic Air Contaminants

The proposed plan includes a mix of uses that would include residential, library, and park uses, and there would be no on-site TAC source during operation. Unlike warehouses or distribution centers, the daily vehicle trips generated by the Civic Project and Residential Project would be primarily generated by passenger vehicles. Passenger vehicles typically use gasoline engines rather than the diesel engines that are found in heavy-duty trucks. Compared to the combustion of diesel, the combustion of gasoline had relatively low emissions of DPM. Consistent with BAAQMD guidance, an operational health risk analysis is not necessary, as the implementation of the proposed plan would not result in significant health impacts during operation.

Operational CO Hotspots

Localized high levels of CO (CO hotspot) are associated with traffic congestion and idling or slow-moving vehicles. The BAAQMD recommends a screening analysis to determine if a project's operation has the potential to contribute to a CO hotspot. The screening criteria identify when site-specific CO dispersion modeling is not necessary. The implementation of the proposed plan would result in a less than significant impact related to air quality for local CO if any of the following screening criteria are met:

- **Screening Criterion 1**: The proposed plan is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans; or
- **Screening Criterion2:** Traffic associated with the proposed plan would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; or
- **Screening Criterion 3:** Traffic associated with the proposed plan would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Screening Criterion 1

Contra Costa Transportation Authority (CCTA) serves as the Congestion Management Agency (CMA) for Contra Costa County. As the CMA, CCTA must prepare, per State law, a Congestion Management Program (CMP) and update it every 2 years. The CMP is meant to outline CCTA's strategies for managing the performance of the regional transportation system within the Contra Costa County. A CMP must contain several components: (1) traffic level of service standards for State highways and principal arterials; (2) multi-modal performance measures to evaluate current and future systems; (3) a 7-year capital program of proposed projects to maintain or improve the performance of the system or mitigate the regional impacts of land use proposed projects; (4) a program to analyze the

impacts of land use decisions; and (5) a travel demand element that promotes transportation alternatives to the single-occupant vehicle. As indicated in Section 3.14, Transportation, the proposed plan would not conflict with any program, plan, ordinance, or policy addressing the addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities with implementation of MM TRANS-1a, MM TRANS-1b (Civic Project only), MM TRANS-1c (Civic Project only), and MM TRANS-1d. Accordingly, the proposed plan would be consistent with the screening Criterion 1 with implementation of the identified mitigation measures.

Screening Criteria 2 and 3

The transportation impact assessment (included as Appendix J) identified AM, afternoon, PM, and weekend peak-hour traffic volumes for 17 intersections affected by the implementation of the proposed plan. The maximum peak-hour intersection volume would occur at Patterson Boulevard/Putnam Boulevard/Oak Park Boulevard in the "Cumulative with Plan" scenario during the PM peak-hour. The estimated cumulative traffic volume at this intersection is 2,123 AM peak-hour trips. This level of peak-hour trips is substantially less than BAAQMD's second and third screening criteria of 44,000 vehicles per hour and 24,000 vehicles per hour respectively. The implementation of the proposed plan would not result in an increase of traffic volumes at affected intersections to more than 44,000 vehicles per hour and would not increase traffic volumes at affected intersections to more than 24,000 where vertical or horizontal mixing is substantially limited; accordingly, the proposed plan is consistent with screening Criteria 2 and 3.

Since the proposed plan would meet at least one of the three screening criteria prior to the incorporation of mitigation, the proposed plan's impact related to air quality for local CO emissions would be less than significant.

Overall

Overall, the operational sensitive receptors exposure to TACs impact would be less than significant.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

Implement MM AIR-2 and the following:

MM AIR-3 Use Construction Equipment That Meets Tier IV Off-road Emission Standards

Civic Project and Residential Project: During construction activities, all off-road equipment with engines greater than 50 horsepower shall meet either EPA or ARB Tier IV Interim off-road emission standards. The construction contractor for the Civic Project and for the Residential Project shall maintain records concerning its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information may include but are not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number.

If engines that comply with Tier IV Interim off-road emission standards are not commercially available, then the construction contractor for the Civic Project and for the Residential Project shall use the next cleanest piece of off-road equipment (e.g., Tier III) available. For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier IV Interim engines taking into consideration factors such as (i) critical-path timing of construction; and (ii) geographic proximity to the Civic Project and Residential Project of equipment. The contractor can maintain records for equipment that is not commercially available by providing letters from at least two rental companies for each piece of off-road equipment where the Tier IV Interim engine is not available.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Objectionable Odors Exposure

Impact AIR-4: The proposed plan would not result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

Odors can cause a variety of responses. The impact of an odor often results from interacting factors such as frequency (how often), intensity (strength), duration (time), offensiveness (unpleasantness), location, and sensory perception. Two circumstances have the potential to cause odor impacts:

1) A source of odors is proposed to be located near existing or planned receptors; or
2) A receptor land use is proposed near an existing or planned source of odor.

To determine significance for this impact, the first circumstance was applied. The BAAQMD's CEQA Air Quality Guidelines provides suggested screening distances for a variety of odor-generating land uses and operations, as shown in Table 3.2-12, which are based on distance between types of sources known to generate odor and the receptor. Projects that would site an odor source or a receptor farther than the applicable screening distance, shown in Table 3.2-12, would not result in a significant odor impact.

Construction

Civic Project and Residential Project

Construction Odors at Existing Odor Sensitive Receptors

Diesel exhaust and ROG would be emitted during construction, the odors of which are objectionable to some. However, construction activity would be short-term and finite in nature. Furthermore, equipment exhaust odors would dissipate quickly, and are common in an urban environment. As such, the construction of the Civic Project and Residential Project would not create objectionable odors affecting a substantial number of people during construction. Therefore, construction odor impacts at existing off-site odor sensitive receptors would be less than significant.

Plan Area as an Odor Sensitive Receptor

Since there are no existing odor sensitive receptors within the plan area, no construction odor impacts in terms of the plan area as an odor sensitive receptor would occur.

Operation

Civic Project and Residential Project

Operational Odors at Existing Off-site Odor Sensitive Receptors

As shown in Table 3.2-22, land uses considered associated with odors typically include agricultural operations (dairies, feedlots, etc.), landfills, wastewater treatment plants, refineries, and other types of industrial land uses. The proposed plan does not propose any of these land uses or other land uses typically associated with emitting objectionable odors. During operation of the Civic Project and Residential Project, potential sources of odor would primarily consist of vehicles traveling to and from the site. Exhaust from mobile sources are not typically associated with numerous odor complaints but are known to have temporary and less concentrated odors. Because exhaust from mobile sources disperse rapidly and would be unlikely to reach nearby sensitive receptors, these occurrences would not produce a significant amount of odors adversely affecting a substantial number of people. Therefore, operational odor impacts at existing off-site odor sensitive receptors would be less than significant.

Plan Area as an Odor Sensitive Receptor

The plan area is not located in the vicinity of agricultural operations (e.g., dairies, feedlots, etc.), landfills, asphalt batch plants, or chemical manufacturing; however, there are several land uses within the screening distances shown in the BAAQMD's guidance. These land uses include a water utility company (located at 2861 Buena Vista Avenue, Walnut Creek), Waste Management Service (located at 2658 North Main Street Walnut Creek), and several auto-body repair shops that could perform on-site painting/coating operations. Public records requests were filed with the BAAQMD to obtain the most recent odor compliant history for possible sources within the vicinity of the plan area. Based on the responses from the BAAQMD Public Records Section, none of potential sources of odor had have received any confirmed complaints over the last ten-year period. Therefore, there are no land uses within the screening distances shown in Table 3-3 of the BAAQMD's guidance that have received five or more confirmed complaints per year for any recent 3-year period. The implementation of the proposed plan would not place odor sensitive receptors near an existing or planned source of odor affecting a substantial number of people. Therefore, operational odor impacts in terms of the plan area as an odor sensitive receptor would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

3.2.5 - Cumulative Impacts

Criteria Air Pollutants

The BAAQMD considers the emission levels for which a project's individual emissions would be cumulatively significant. As such, if a project exceeds the identified thresholds of significance, its emissions would be significant in terms of both project- and cumulative-level impacts, resulting in significant adverse air quality impacts to the region's existing air quality conditions. As stated in the BAAQMD 2017 CEQA Guidelines, additional analysis to assess cumulative impacts is unnecessary. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the project would result in regional emissions that exceed BAAQMD

regional thresholds of significance for construction and operations on a project level. Projects that generate emissions below the BAAQMD significance thresholds would be considered consistent with regional air quality planning efforts would not generate cumulatively significant emissions. See Impacts AIR-1 and AIR-2 for analysis and discussion of the cumulative air quality management plan consistency and criteria air pollutant emissions impacts. Overall, Impacts AIR-1 and AIR-2 determined that the cumulative construction and operational criteria air pollutant emissions impacts would be less than significant with mitigation.

Toxic Air Contaminants

Construction Emissions at Existing Maximum-impacted Air Pollution Sensitive Receptor

The BAAQMD recommends assessing the potential cumulative impacts from sources of TACs within 1,000 feet of a project site. For the proposed plan, the cumulative impact assessment quantified the cumulative impacts from TAC emission sources located within 1,000 feet of the plan area in addition to the maximum TAC emissions from implementation of the proposed plan. For cumulative-level TACs analysis, BAAQMD provides three tools for use in screening potential cumulative sources of TACs. These tools are:

- **Surface Street Screening Tables.** The BAAQMD pre-calculated potential cancer risk and $PM_{2.5}$ concentration increases for each county within their jurisdiction. The look-up tables are used for roadways that meet BAAQMD's "major roadway" criteria of 10,000 vehicles or 1,000 trucks per day. Risks are assessed by roadway volume, roadway direction, and distance to sensitive receptors. The segment of Oak Park Boulevard located between I-680 and Monticello Avenue is estimated to carry approximately 11,670 annual average daily trips[33] and is located within the plan area boundary, approximately 20 feet south of the proposed library. Oak Park Boulevard is located approximately 437 feet south of the MIR identified in the analysis of the proposed plan's construction-related health risk impacts.
- **Freeway Screening Analysis Tool**. The BAAQMD prepared a Google Earth file that contains pre-estimated cancer risk, hazard index, and $PM_{2.5}$ concentration increases for highways within the Bay Area. Risks are provided by roadway link and are estimated based on elevation and distance to the sensitive receptor. There are no freeways located within 1,000 feet of the plan area boundary.
- **Stationary Source Risk and Hazard Screening Tool**. The BAAQMD prepared a Google Earth file that contains the locations of all stationary sources within the Bay Area that have BAAQMD permits. For each emissions source, the BAAQMD provides conservative cancer risk and $PM_{2.5}$ concentration increase values. There is one stationary source identified by this screening tool that is located within approximately 1,000 feet of plan area or the proposed project's MIR.

Table 3.2-22 lists the cumulative health impacts at the MIR estimated to occur during construction of the Civic Project and Residential Project. As discussed in Impact AIR-3, the MIR during construction was determined to be a residence located approximately 160 feet east of the plan area, off St.

[33] City of Pleasant Hill. 2015. Revised Circulation Element. April. Website: https://www.ci.pleasant-hill.ca.us/DocumentCenter/View/15021/1-13-15-Draft-Circulation-Amendment-REVISED-Final?bidId=. Accessed August 13, 2019.

Lawrence Way. Note that there are no existing air pollution sensitive receptors within the plan area that could be affected by cumulative construction TACs emissions.

Table 3.2-22: Cumulative Construction Air Quality Health Impacts at the MIR

Source	Source Type	Distance from MIR (feet) [1]	Cancer Risk (per million)	Chronic Non-Cancer HI	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Proposed Plan					
Unmitigated Civic and Residential Construction	Construction Emissions	160	41.0	0.03	0.32
Existing Stationary Sources (BAAQMD Facility Number)					
G11826	Gasoline Dispensing Facility[2]	737	0.65	0.001	NA
Local Road[3] (>10,000 AADT)					
Oak Park Boulevard	Traffic on Local Road	437	1.03	ND	0.024
Cumulative Health Risks from Proposed Plan Construction and Existing TAC Sources					
Cumulative Total at MIR with Construction of the Civic Project and Residential Project[1]			42.68	0.031	0.344
BAAQMD Cumulative Thresholds of Significance			**100**	**10**	**0.8**
Threshold Exceedance?			**No**	**No**	**No**

Notes:
MIR = maximum impacted sensitive receptor
NA = not available
ND = no data available
AADT = annual average daily traffic
[1] The MIR is a residence located approximately 160 feet east of the plan area, off St Lawrence Way.
[2] Health impacts from this gasoline dispensing facility were corrected using the BAAQMD's Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities Tool.
[3] The cancer risks screening analysis for stationary sources, roadways and highways sources updated in 2011 use the 2010 BAAQMD Health Risks Guidance. The cancer risks were corrected by a factor of 1.12 to incorporate the latest 2016 cancer risk guidance published by the BAAQMD that includes the latest assumptions on estimation of cancer risks for a 30-year exposure duration. http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en
Source: FirstCarbon Solutions (FCS) and CalEEMod, see Appendix C.

As noted above in Table 3.2-22, the cumulative health impacts at the MIR from existing TAC emission sources located within 1,000 feet, combined with the Civic Project and Residential Project unmitigated construction-related emissions would not exceed the BAAQMD's recommended cumulative health significance thresholds. Therefore, the cumulative impact during construction would be less than significant.

Operational Emissions at Plan Area as an Air Pollution Sensitive Receptor

When siting a new sensitive receptor (such as residential and park uses), the BAAQMD also recommends that the analysis include an evaluation of TACs that could adversely affect individuals within a planned project. Therefore, the BAAQMD screening analysis was applied at the Civic Project and Residential Project sites for conditions at build-out. Table 3.2-23 summarizes the cumulative health impacts within the plan area at buildout.

Table 3.2-23: Cumulative Operation Air Quality Health Impacts at the Plan Area

Source	Source Type	Distance from Plan Area (feet)	Cancer Risk (per million)	Chronic Non-Cancer HI	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Existing Stationary Sources (BAAQMD Facility Number)					
G11826	Gasoline Dispensing Facility[(1)]	900	0.468	0.001	NA
Local Road[(2)] (>10,000 AADT)					
Oak Park Boulevard	Traffic on Local Road	20	5.449	ND	0.128
Cumulative Health Risks from Proposed Plan Construction and Existing TAC Sources					
Cumulative Total at MIR with Proposed Plan Construction			5.917	0.001	0.128
BAAQMD Cumulative Thresholds of Significance			**100**	**10**	**0.8**
Threshold Exceedance?			**No**	**No**	**No**

Notes:
MIR = maximum impacted sensitive receptor
NA = not available
ND = no data available
AADT = annual average daily traffic
(1) Health impacts from this gasoline dispensing facility were corrected using the BAAQMD's Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities Tool.
(2) The cancer risks screening analysis for stationary sources, roadways and highways sources updated in 2011 use the 2010 BAAQMD Health Risks Guidance. The cancer risks were corrected by a factor of 1.12 to incorporate the latest 2016 cancer risk guidance published by the BAAQMD that includes the latest assumptions on estimation of cancer risks for a 30-year exposure duration. http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en
Source: FirstCarbon Solutions (FCS) and CalEEMod, see Appendix C.

As noted in Table 3.2-23, the cumulative health impacts from existing TAC emission sources located within 1,000 feet of the plan area would not exceed the BAAQMD's cumulative health significance thresholds. Therefore, the cumulative operational TACs impacts would be less than significant.

Overall, the cumulative construction and operational TACs impacts would be less than significant.

Level of Cumulative Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Cumulative Mitigation Measures

Implement MM AIR-2, MM AIR-3, and MM GHG-1 (Civic Project and Residential Project)

Level of Cumulative Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

3.3 - Biological Resources

3.3.1 - Introduction

This section describes the existing biological resources conditions in the Specific Plan area (plan area) as well as the relevant regulatory framework. This section also evaluates the possible impacts related to biological resources that could result from implementation of the Specific Plan (proposed plan). Information in this section is based on site reconnaissance surveys of the plan area that included wetland assessment/due diligence memo, California red-legged frog (*Rana draytonii*) habitat assessment, Jurisdictional Delineation, as well as a plan-specific arborist report and biological constraints reports contained in Appendix D. The following comments were received during the Environmental Impact Report (EIR) scoping period related to biological resources:

- Request that mitigations measures address all direct and indirect (temporary and permanent) plan impacts and cumulative impacts and include implementation of a Lake and Streambed Alteration Agreement;
- Concern regarding impacts to Grayson Creek; and
- General concern regarding impacts to biological resources.

3.3.2 - Environmental Setting

Records Searches and Pedestrian Surveys to Identify Existing Biological Resources

Literature Review

The literature review provides a baseline from which to evaluate the biological resources potentially occurring in the plan area, as well as in the surrounding area.

FirstCarbon Solutions (FCS) Biologists examined existing environmental documentation for the plan area and immediate vicinity. This documentation included the arborist report and biological constraints report noted above; relevant biological studies for the plan area; relevant literature pertaining to the habitat requirements of special-status species potentially occurring near the plan area; and federal and State register listings, protocols, and species data provided by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW).

Elevation and Drainage

FCS Biologists reviewed current United States Geological Survey (USGS) 7.5-minute topographic quadrangle map(s) and aerial photographs as a preliminary analysis of the existing conditions within the plan area and immediate vicinity. Information obtained from the review of the topographic maps included elevation range, general watershed information, and potential drainage feature locations.[1] Aerial photographs provide a perspective of the most current site conditions relative to on-site and off-site land use, plant community locations, and potential locations of wildlife movement corridors.

[1] United States Geological Survey (USGS). 2019 USGS Maps. Website: https://www.usgs.gov/products/maps/map-topics/overview. Accessed February 12, 2019.

Soils

FCS Biologists also reviewed United States Department of Agriculture (USDA) soil surveys to establish if soil conditions in the plan area are suitable for any special-status plant species.[2] These soil profiles include soil series with similar thickness, arrangement, and other important characteristics. The soil series consist of separate soil mapping units that provide specific information regarding soil characteristics. Many special-status plant species have a limited distribution based exclusively on soil type. Therefore, pertinent USDA soil survey maps were reviewed to determine the existing soil mapping units within the plan area and to establish if soil conditions are suitable for any special-status plant species.[3]

Special-Status Wildlife and Plant Species

FCS Biologists compiled a list of threatened, endangered, and otherwise special-status species previously recorded within the general plan area vicinity. The list was based on a search of the CDFW California Natural Diversity Database (CNDDB),[4] a special-status species and plant community account database, and the California Native Plant Society (CNPS) Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California database[5] for the Walnut Creek, California USGS 7.5-minute topographic quadrangle map. The database search results can be found in Appendix D. The CNDDB Biogeographic Information and Observation System (BIOS) database[6] was used to determine the distance between known recorded occurrences of special-status species and the plan area.

Trees

FCS Biologists reviewed applicable City ordinances pertaining to tree preservation and protective measures and their tree replacement conditions or permits required, specifically the Pleasant Hill Municipal Code Section 18.50.110. Additionally, FCS Biologists reviewed Section 18.50.150, which governs creek setbacks, and performed a technical review of the arborist report prepared for the plan area.

Jurisdictional Waters and Wetlands

FCS Biologists reviewed USGS topographic maps and aerial photography to identify potential natural drainage features and water bodies. In general, surface drainage features identified as blue-line streams on USGS maps and linear patches of vegetation are expected to exhibit evidence of flows and considered potentially subject to State and federal regulatory authority as "waters of the United States and/or State." FCS also reviewed a 2017 United States Army Corp of Engineers (USACE) jurisdictional determination for Grayson Creek.[7] FCS Biologists conducted a preliminary wetland assessment of the

[2] United States Department of Agriculture (USDA). Web Soil Survey. 2019 Soil Survey. Website: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed February 12, 2019.
[3] *Ibid*.
[4] California Department of Fish and Wildlife (CDFW). 2019 Rarefind. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed February 12, 2019.
[5] California Native Plant Society (CNPS). 2019. Rare and Endangered Plant Inventory. Website: http://rareplants.cnps.org/. Accessed February 12, 2019.
[6] California Department of Fish and Wildlife (CDFW). 2005. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios/.
[7] United States Army Corps of Engineers (USACE). 2017. Jurisdictional Determination. Website: https://www.spn.usace.army.mil/Portals/68/docs/regulatory/Jurisdictional%20Determinations/2017/SPN-2015-00459_AJD_9.25.17.pdf . Accessed July 22, 2019

plan area in March 2018 to determine the location of any existing jurisdictional features and to aid in determining if a formal delineation of waters of the United States or State is necessary.[8]

Field Surveys

On March 28, 2018, an FCS Biologist conducted a reconnaissance-level field survey of the plan area and surrounding area up to 100 feet where possible. The reconnaissance-level survey was conducted on foot during daylight hours. The purpose of the survey was not to extensively search for every species occurring within the plan area, but to ascertain general site conditions and identify potentially suitable habitat areas for various special-status plant and wildlife species. Special-status or unusual biological resources identified during the literature review were ground-truthed during the reconnaissance-level survey for mapping accuracy. Special attention was paid to sensitive habitats and areas potentially supporting special-status floral and faunal species.

In addition, on January 30, 2019, FCS Biologists conducted a California red-legged frog (CRLF) habitat assessment to determine the potential presence of the species given the habitat conditions present adjacent to and within Grayson Creek.

Physical Habitat/Vegetation

Habitat is an area consisting of a combination of resources (e.g., food, cover, water) and environmental conditions (e.g., temperature, precipitation, and presence or absence of predators and competitors) that promotes occupancy by individuals of a species and enables those individuals to survive and reproduce. Thus, habitat arises from interaction among soils, hydrology, climate, and vegetation. Soils, hydrology, and climate are addressed in other sections of this EIR; this habitat discussion includes information regarding vegetation.

City of Pleasant Hill

The City of Pleasant Hill is largely composed of urban and developed areas. Undeveloped areas with habitat communities in the City consist primarily of Mediterranean plant associations, but vary depending on microclimate. There are several waterways that provide habitat for wetland and riparian species of flora and fauna. In addition, there are various open space areas that display grassland and shrubland/chaparral habitat. Overall, these natural areas are small in size and generally isolated areas surrounded by urban development.

Plan Area

The area east of Monticello Avenue is currently undeveloped, while the area west of Monticello Avenue contains the existing library and administrative offices. The plan area is surrounded by a public park and Pleasant Hill Middle School to the north, commercial development to the west, and residential development to the east and south. The plan area also contained buildings that were originally utilized for an elementary school, which ceased operation in 1976; subsequently, these buildings were then taken over by a series of non-profits until 2008; all buildings and hardscape were demolished in 2009. Grayson Creek is located within the eastern portion of the Civic Project site. Biotic habitats found in the plan area include Urban/Developed, Ruderal, Riparian Woodland, and Creek (Exhibit 3.3-1). The plan area includes two project components associated with

[8] Wetland Assessment Memo. 2018. FirstCarbon Solutions (FCS).

redevelopment, the Civic Project Site and the Residential Project site, which are described in detail in the following text.

Civic Project

This property is undeveloped and contains habitat classified as ruderal, non-native grassland. Vegetation characteristic of ruderal vegetation includes non-native grasses and other weedy species. Vegetation consisted of pampas grass (*Cortaderia selloana*), common vetch (*Vicia sativa*), burclover (*Medicago polymorpha*) and curly dock (*Rumex crispus*). Additionally, recent tire tract marks were present at the time of the survey, signifying a high level of disturbance and activity. As previously described, the site was formerly developed as an elementary school, which ceased operation in 1976. The buildings were utilized by a series of non-profits until 2008; all buildings and hardscape were demolished in 2009.

Grayson Creek Corridor contains riparian vegetation along a perennial stream in nutrient rich soils, with moderate slopes. These areas are subject to frequent inundation and can help control sediment erosion. The creek supports a mix of native and introduced species. Species observed consisted of valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), olive (*Olea europaea*), acacia (*Acacia* spp.), silk tree (*Albizia julibrissin*), dallis grass (*Paspalum dilatatum*), cattails (*Typha* spp.), Johnson grass (*Sorghum halepense*), and field hedge parsley (*Torilis arvensis*).

Vegetation along Monticello Avenue and Oak Park Boulevard consists of planted, ornamental species of trees, such as carob, Canary Island pine (*Pinus canariensis*), and Monterey pine (*Pinus radiata*).

Residential Project

This property contains an existing library and administrative offices. Existing habitat is classified as urban/developed, indicating areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported and retains no soil substrate. Developed land is characterized by permanent or semi-permanent structures, pavement, or hardscape, and landscaped areas that often require irrigation. This property contains impervious surfaces, buildings and is highly developed. Vegetation consists of several species of planted, ornamental trees, such as cypress (*Cupressus* spp.), juniper (*Juniperus* spp.), carob tree (*Ceratonia siliqua*) as well as associated shrubs and bushes, such as California sage (*Artemisia californica*), California lilac (*Ceanothus* spp.), and coyote brush (*Baccharis pilularis*).

Sensitive Biological Communities

Biological communities are assemblages of organisms that live within or use a variety of habitats for their range-of-life functions. Of the habitat communities discussed above, some are further identified as sensitive biological communities. For the purpose of this document, sensitive biological communities are defined as habitats that fulfill special functions or have special values (e.g., greater biological diversity), such as wetlands, streams, and riparian habitat. Because wildlife is a major aspect of a biological community, this discussion of sensitive biological communities describes wildlife present in such communities.

Source: Bing Aerial Imagery.

FIRSTCARBON SOLUTIONS™

300 150 0 300

Feet

Exhibit 3.3-1
Existing Habitat within Plan Area

THIS PAGE INTENTIONALLY LEFT BLANK

City of Pleasant Hill

The sensitive biological communities present within the City are mainly areas associated with riparian corridors. There are a variety of areas that may be considered sensitive biological communities, dependent on the aggregations of plant and wildlife species that potentially occur in these areas. They include, but are not limited to, mixed oak woodland, riparian woodland, evergreen forests, chaparral forests, redwood forests, and native grasslands.

Plan Area

Grayson Creek, located along the eastern perimeter of the plan area, and within the Civic Project site, is considered a sensitive biological community displaying vegetation commonly found in riparian areas. In these areas, riparian vegetation along streambanks provides unique habitat to fish and other aquatic wildlife.

Wetlands and Waters of the United States and the State

Wetlands and waters of the United States and waters of the State are protected as hydrological resources, but also often provide habitat for common and special-status species. Types of water features include open water, developed open water, tidal marsh, seasonal wetland, wetlands swale, and waters.

Contra Costa County Area

Wetlands, waters of the United States, and waters of the State in the Contra Costa County area occur primarily near the coast in the San Pablo Bay, Suisun Bay, and their associated features. Additionally, there are several reservoirs, such as the San Pablo reservoir, Briones reservoir, and Los Vaqueros reservoir.

Plan Area

An FCS Biologist completed a focused wetland assessment on March 28, 2018, which was prepared on April 6, 2018, to determine the potential presence of any jurisdictional wetlands. Subsequently, an FCS Biologist completed a jurisdictional delineation on June 5, 2019, which was prepared on July 17, 2019. The delineation identified 810 linear-feet of potential waters of the United States in the form of Grayson Creek. The plan area lacks wetland hydrology and hydric soils, and is unlikely to contain jurisdictional wetlands.

Based on field observations, Grayson Creek displays a defined bed and bank and has indicators of perennial water flow. Additionally, the creek flows northward into the Suisun Bay via Pacheco Creek. Due to these characteristics, Grayson Creek, in the eastern portion of the plan area and within the Civic Project site, is likely to be a considered and regulated as waters of the United States and State.

Common Species

The vegetation community and land cover types discussed above provide habitat for a limited number of local wildlife species. The previously disturbed nature of the plan area in addition to the high level of traffic and development surrounding the plan area allow for a limited number of wildlife species to occur. The majority of plant species that can tolerate disturbed and fragmented habitat conditions are generally invasive species and non-native species. The small number of wildlife species observed on or

near the plan area primarily consisted of avian species identified by song or sight. The numerous trees within the plan area boundaries offer suitable habitat for a variety of nesting birds. During the March 2018 field survey, biologists detected the following species on or near the plan area by sight or vocalizations: mourning dove (*Zenaida macroura*), California scrub jay (*Aphelocoma californica)*, and house finch (*Haemorhous mexicanus*). In addition, Live Oak Associates Inc. detected several other species of birds, such as Anna's hummingbird (*Calypte anna*), rock pigeon (*Columba livia*) and American crow (*Corvus brachyrhynchos*), Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), and several other species of birds commonly found in urban areas.

Special-Status Species

Habitat, whether aquatic or terrestrial, supports ecological functions and processes to preserve biological communities (i.e., wildlife) that live within it for all or a portion of their life cycle. Special-status species, whether plants, wildlife, or fish, are considered sufficiently rare that they require special consideration and/or protection and have been or should be listed as rare, threatened, or endangered by the federal and/or State governments. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under the California Endangered Species Act (CESA) or the Federal Endangered Species Act (FESA);
- Protected under other regulations (e.g. Migratory Bird Treaty Act [MBTA]);
- California Department of Fish and Wildlife Species of Special Concern;
- Plant species ranked by the California Native Plant Society; or
- Receive consideration during environmental review under California Environmental Quality Act (CEQA).

The following discussion focuses on the occurrence or potential for occurrence of special-status species in the plan area.

Special-Status Plants in the Plan Area

Special-status plant communities are considered sensitive biological resources when federal, state, or local laws regulate their development, limited distributions, and habitat requirements of special-status plant or wildlife species that occur within them.

The Special-Status Plant Species Table (Appendix D) identifies 18 special-status plant species. The table is based partly on the FCS field visit, the Biological Constraints Analysis performed by Live Oak Associates, Inc., and species that have been recorded to occur within the Walnut Creek, California quadrangle, as recorded by the CNDDB and CNPSEI.[9,10] The table also includes each species' status, required habitat, and potential to occur within the plan area.

[9] California Department of Fish and Wildlife (CDFW). 2019 Rarefind. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed February 12, 2019.

[10] California Native Plant Society (CNPS). 2019. Rare and Endangered Plant Inventory. Website: http://rareplants.cnps.org/. Accessed February 12, 2019.

Of the 18 special status plant species that are listed in the special species stable, none are expected to occur within the plan area. This is due to a combination of factors but mainly can be contributed to the high level of disturbance, lack of suitable habitat—most notably serpentine soils and rock outcroppings—and the lack of observations during FCS's field survey of the plan area and surrounding areas.

Special-Status Wildlife in the Plan Area

The Special-Status Wildlife Species Table (Appendix D) identifies nine special-status wildlife species with the potential to occur regionally. The table is based on the field surveys, the biological constraints report, the CRLF habitat assessment, and the species that have been recorded to occur within the Walnut Creek, California quadrangle, as recorded by the CNDDB and CNPSEI.[11,12] The table also includes each species' status, required habitat, and potential to occur within the plan area.

Note that FCS Biologists conducted a focused habitat assessment for the CRLF (Appendix D) and determined this species to be likely absent from the plan area given current habitat conditions.

Of the nine special-status wildlife species listed in the special species table, three have the potential to occur, albeit low, within or adjacent to the plan area boundaries. These three species are further described below.

Mammals

Townsend's big-eared bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is a California Species of Special Concern that occurs throughout California in a wide variety of habitats. The species may roost in buildings, hanging from walls and ceilings. The plan area contains marginal foraging habitat due to the presence of Grayson Creek within the Civic Project site; however, the species is extremely sensitive to human disturbance and thus, has low potential to occur.

Pallid bat

The Pallid bat (*Antrozous pallidus*) is a California Species of Special Concern that is found in grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. While both the plan area contains marginal foraging habitat, this species is very sensitive to human disturbance and as such, has a low potential to occur.

Reptiles

Western Pond Turtle

The western pond turtle (*Actinemys marmorata*) is a California Species of Special Concern and has no federal status. This species is primarily aquatic and habitat includes ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. This species only leaves aquatic habitat to reproduce and to overwinter. This species requires basking sites and suitable (grassy open fields) upland habitat for egg-laying. Eggs are buried in nests that are usually found within 250 meters of

[11] California Department of Fish and Wildlife (CDFW). 2019 Rarefind. Website https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed February 12, 2019.

[12] California Native Plant Society (CNPS). 2019. Rare and Endangered Plant Inventory. Website: http://rareplants.cnps.org/. Accessed February 12, 2019.

water. This species has a low potential to occur given the urban setting of the plan area coupled with the lack of deep pooling features within Grayson Creek within the Civic Project site.

Birds

Migratory and Nesting Birds

Trees within the plan area provide suitable nesting habitat for various avian species, including those protected under the MBTA. Some species protected under the MBTA that have the potential to occur within the plan area include white-tailed kite (*Elanus leucurus*) and northern harrier (*Circus hudsonius*).

Wildlife Movement Corridors

Contra Costa County Area

Terrestrial habitat throughout Contra Costa County ranges from high to low quality and varies in accessibility and continuity for wildlife movement. Wetland and riparian habitats along coastal areas and inland reservoirs provides wildlife movement corridors for numerous fish and bird species. In addition, the Pacific Flyway (a major north-south flyway for migratory birds in America) encompasses the entire West Coast, and migrating bird species utilize the wetland and riparian habitats, especially the Suisun marshes and estuaries in San Pablo Bay, for foraging and resting.

Plan Area

Grayson Creek and its associated habitat have the potential to support terrestrial, avian, and aquatic wildlife movement in and out of the plan area. The Civic Project site within the plan area consists of fragmented habitat, non-native grassland, and dense urban development that further impedes the movement of these species.

Protected Trees

Plan Area

Trees are regulated under Section 18.50.110 of the Pleasant Hill Municipal Code. Section 18.50.110 protects any native oak tree or indigenous tree with a trunk diameter measurement of 9 inches or larger. Indigenous trees include but are not limited to the red alder (*Alnus oregona)*, bigleaf maple (*Acer macrophyllum*), California buckeye (*Aesculus californica)*, madrone (*Arbutus menziesii*), California bay laurel (*Umbellularia californica)*, California black walnut (*Juglans hindsii)*, California sycamore (*Platanus racemosa*), or elderberry (*Sambucus mexicana)*. The code also protects non-native trees (not including eucalyptus) with a trunk diameter measurement of 18 inches or larger. Non-native trees include species such as coastal redwood (*Sequoia sempervirens)*, Canary Island pine (*Pinus halepensis),* Aleppo pine (*Pinus pinea),* Italian stone pine (*Pinus radiata)*, American elm (*Ulmus americana),* Chinese elm (*Ulmus parvifolia)*, Siberian elm (*Ulmus pumila),* American sweet gum (*Liquidambar Styraciflua*), deodar cedar (*Cedrus deodara)*, atlas cedar (*Cedrus atlantica)*, shamel ash (*Fraxinus uhdei)*, white ash (*Fraxinus american)*, raywood ash (*Fraxinus augustifolia*), Cypress species (*Cupressus*), fruit/fruitless mulberry (*Morus alba*), black locust (*Robinia pseudoacacia*), Callery pear (*Pyrus calleryana)*, camphor (c*innamomum camphora*).

There are 302 existing trees representing 29 species plus multiple subspecies of oak, pine, eucalyptus, and ash totaling 38 throughout the entire plan area. The arborist report (Appendix D)

lists the location, species, and health of all trees found in the plan area. Table 3.3-1 summarizes the tree species within the plan area:

Table 3.3-1: Tree Species in the Plan Area

Tree Species	Civic Project	Residential Project
Oak (multiple species)	90	25
Pine (multiple species)	13	29
Cedar	—	5
Carob	10	—
Palm	2	—
Almond	1	—
Walnut	7	—
Acacia	9	—
Mulberry	14	—
Elm	4	—
London Plane	10	—
Cypress	8	1
Elderberry	1	—
Ash (multiple species)	7	—
Glossy privet	1	1
Sweetgum	1	17
Hollywood juniper	—	6
Crepe myrtle	—	5
Ginkgo	2	1
Koelrenteria	1	—
Eucalyptus (multiple species)	1	12
Madrone	—	1
Boxelder	1	—
Olive	10	—
Black locust	1	—
California pepper	1	—
Honey locust	2	—
Catalpa	1	—
Willow	1	—
Total	**199**	**103**

3.3.3 - Regulatory Framework

Federal

Federal Endangered Species Act

The USFWS administers the Federal Endangered Species Act (FESA). The United States Congress passed FESA in 1973 to protect those species that are endangered or threatened with extinction. FESA provides a process for listing species as either threatened or endangered, and methods of protecting listed threatened and endangered species. FESA defines as "endangered" any plant or animal species that is in danger of extinction throughout all or a significant portion of its known geographic range. A "threatened" species is a species that is likely to become endangered. A "proposed" species is one that has been officially proposed by the USFWS for addition to the federal threatened and endangered species list.

According to FESA Section 9, "take" of threatened or endangered species is prohibited. FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA § 3(3)(19)). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations [CFR] § 17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR § 17.3). Actions that result in take can result in civil or criminal penalties.

FESA and Clean Water Act (CWA) Section 404 Guidelines prohibit the issuance of CWA permits for projects or plans that jeopardize the continued existence of any federally listed endangered species or threatened species or result in the destruction or adverse modification of critical habitat designated for such species. The USACE must consult with the USFWS and/or the National Marine Fisheries Service (NOAA) when threatened or endangered species under their jurisdiction may be affected by a proposed federal action. In the context of the proposed plan, FESA would apply to development that (1) results in take of a federally threatened or endangered species; or (2) the issuance of a Section 404 permit or other federal agency action that may result in take of a federally threatened or endangered species; or (3) if the proposed federal action would result in the destruction of/or adverse modification of critical habitat of such a species.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal MBTA prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

Clean Water Act

The USACE regulates discharge of dredge or fill material into waters of the United States under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into waters of the United States, including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other

material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines (33 CFR § 328.2(f)). In addition, Section 401 of the CWA (33 United States Code [USC] 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable state water quality standards.

In California, the term "waters of the United States," indicates resources that are subject to jurisdiction of the Clean Water Act (CWA) as defined by the 2015 Clean Water Rule:[13]

(1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters, including interstate wetlands;

(3) The territorial seas;

(4) All impoundments of waters otherwise identified as waters of the United States under this section;

(5) All tributaries, of waters identified in paragraphs (1) through (3) of this section;

(6) All waters adjacent to a water identified in paragraphs (1) through (5) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;

(7) Western vernal pools, where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (1) through (3). Vernal pool identified in this paragraph shall not be combined with waters identified in paragraph (6) when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (6), they are an adjacent water and no case-specific significant nexus analysis is required.

Wetlands are a subset of waters of the United States and receive protection under Section 404 of the CWA. The federal definition of wetlands is the following:

> Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

The Section 404(b)(1) guidelines regarding the implementation of Section 404 of the CWA mandate that filling wetlands be avoided unless it can be demonstrated that the project is the least

[13] United States Environmental Protection Agency (EPA) and United States Army Corps of Engineers (USACE), Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. 37053 (June 29, 2015).

environmentally damaging practicable alternative.[14] The USACE has primary federal responsibility for administering regulations that concern waters and wetlands.

State

California Endangered Species Act

The State of California enacted CESA in 1984. CESA is similar to FESA but pertains to State-listed endangered and threatened species. CESA requires State agencies to consult with the CDFW regarding the potential take of State listed threatened or endangered species. The purpose is to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code [FGC] § 2080). CESA directs agencies to consult with the CDFW on projects or plans that could affect listed species, directs the CDFW to determine whether jeopardy would occur and allows the CDFW to identify "reasonable and prudent alternatives" to a project or plan consistent with conserving the species. CESA allows the CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project or plan that has been approved under CEQA (FGC § 2081).

Special-Status Natural Communities

Special-status natural communities, as identified by CDFW's Natural Heritage Division, are those that are naturally rare and those whose extent has been greatly diminished through land use changes. The CNDDB tracks 135 such natural communities in the same way that it tracks occurrences of special-status species: by maintaining information about each site's location, extent, habitat quality, level of disturbance, and current protection measures. The CDFW is mandated to seek the long-term perpetuation of the areas in which these communities occur. Although no Statewide laws require protection of all special-status natural communities, CEQA requires consideration of the potential impacts of a project or plan on biological resources of Statewide or regional significance.

California Department of Fish and Game Codes

Fully protected fish species are protected under Fish and Game Code, Section 5515; fully protected amphibian and reptile species are protected under Section 5050; fully-protected bird species are protected under Section 3511; and fully protected mammal species are protected under Section 4700. The California Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited. Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Sections 2062 and 2067 define endangered and threatened species.

The CDFW is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify the CDFW if a project or plan will "substantially divert or obstruct the natural flow or substantially change the bed, channel,

[14] For project permits issued under the CWA pursuant to a nationwide permit, the analysis of the least environmentally damaging practicable alternative has already been completed by the federal government.

or bank of any river, stream, or lake designated by the department, or use any material from the streambeds . . . except when the department has been notified pursuant to Section 1601." Additionally, the CDFW may assert jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4 inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, the CDFW may propose reasonable measures that will allow protection of those resources.

California Department of Fish and Wildlife Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. The CDFW tracks species in California whose numbers, reproductive success, or habitat may be threatened. In addition to Species of Special Concern, the CDFW identifies animals that are tracked by the CNDDB, but warrant no federal interest and no legal protection. These species are identified as California Special Animals.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed CDFW to carry out the Legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. CESA expanded on the original NPPA and enhanced legal protection for plants. CESA established categories for threatened and endangered species and grandfathered all rare animals—but not rare plants—into the Act as threatened species. Thus, the State of California employs three listing categories for plants: rare, threatened, and endangered.

The CNPS maintains a rank of plant species native to California that has low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS ranks:

- **Rank 1A:** Plants presumed Extinct in California
- **Rank 1B:** Plants Rare, Threatened, or Endangered in California and elsewhere
- **Rank 2:** Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- **Rank 3:** Plants about which we need more information—A Review List
- **Rank 4:** Plants of limited distribution—A Watch List

All plants appearing on CNPS List ranked 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA.

Porter-Cologne Water Quality Control Act

Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State. The waterway within the plan area is likely considered waters of the State, which are protected under this Act.

Historically, California relied on its authority under Section 401 of the CWA to regulate discharges of dredged or fill material to waters of the United States. Section 401 requires an applicant to obtain "water quality certification" from the State Water Resources Control Board (State Water Board) through its Regional Water Quality Control Boards (RWQCBs) to ensure compliance with State water quality standards before certain federal licenses or permits may be issued. The permits subject to Section 401 include permits for the discharge of dredged or fill materials (CWA § 404 permits) issued by the USACE. RWQCB's typically waived waste discharge requirements under the Porter-Cologne Water Quality Control Act for projects or plans that also required Section 401 certification. Following the U.S. Supreme Court's decision *Rapanos v. United States,* 547 U.S. 715 (2006) which limited the jurisdiction of wetlands under the CWA, RWQCB's now generally rely on the report of waste discharge process to regulate discharges into waters of the State.

California Code of Regulations (Wetlands and Waters Definition)

The State Water Board indicates that no single accepted definition of wetlands exists at the State level, and that RWQCBs may have different requirements and levels of analysis with regard to the issuance of water quality certifications. Generally, an area is a wetland if, under normal circumstances:

(1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

Under California State law, waters of the State means "any surface water or groundwater, including saline waters, within the boundaries of the state." As such, water quality laws apply to both surface water and groundwater. After the U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (53 USC 159), the Office of Chief Counsel of the State Water Board released a legal memorandum confirming the State's jurisdiction over isolated wetlands. The memorandum stated that under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other waters of the State are subject to State regulation, and this includes isolated wetlands. In general, the State Water Board regulates discharges to isolated waters in much the same way as it does for waters of the United States, using Porter-Cologne rather than CWA authority.

The CDFW is a trustee agency that has jurisdiction under Section 1600 *et seq*. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify the CDFW if a project or plan will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601." Additionally, the CDFW may assert jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4 inches DBH. If an existing fish or wildlife resource may be substantially adversely affected by the activity, the CDFW may propose reasonable measures that will allow protection of those resources. If the applicant agrees to these measures, the applicant may enter into an agreement with the CDFW identifying the covered activities, impacts to CDFW jurisdictional features, and compensatory mitigation.

Local

Pleasant Hill 2003 General Plan

Community Development Element

The proposed plan will be required to abide by all applicable policies contained in the Pleasant Hill 2003 General Plan. Specifically:

Community Development Goals and Policies

- **Goal 20:** Preserve open space areas, hillsides and natural features.
- **Policy 20A:** Ensure that open space and undeveloped hillsides remain free of future development.
- **Goal 21:** Preserve and reclaim streams, wetlands and riparian areas to function as open space.
- **Policy 21A:** Require reclamation of degraded streams, wetlands and riparian areas, including wildlife migration corridors, where possible in cooperation with the Flood Control District.
- **Goal 22:** Protect native species and their habitat.
- **Policy 22A:** Minimize the impacts of development on plants and animals, including sensitive habitat and migration corridors.

Pleasant Hill Municipal Code

The Pleasant Hill Municipal Code establishes the following guiding and implementing policies associated with biological resources, including the Pleasant Hill Tree Preservation Ordinance provisions that are relevant to the proposed plan:

Section 18.50.110 Tree preservation

A. Permit required. No person, firm, corporation, private or public utility or governmental entity shall remove, relocate, excessively trim, damage or demolish a protected tree or heritage tree prior to obtaining a tree removal permit from the zoning administrator or approval from another applicable city decision-making body pursuant to subsection C, I or J of this section. City-initiated projects or plans shall also be subject to all of the provisions of this chapter unless specifically exempted by the city council.
   1. Protected trees. The term "protected tree" means any of the following:
      a. Any native oak tree with a trunk diameter measurement of nine inches or larger.

b. Any indigenous tree with a trunk diameter measurement of nine inches or larger. Indigenous trees include but are not limited to: *Alnus Oregona* (Red Alder), *Acer Macrophyllum* (Bigleaf Maple), *Aesculus Californica* (California Buckeye), *Arbutus Menziesii* (Madrone), *Umbellularia Californica* (California Bay or Laurel), *Juglans Hindsii* (California Black Walnut), *Platanus Racemosa* (California Sycamore), or *Sambucus Mexicana* (Elderberry).
c. A nonnative tree (not including Eucalyptus) with a trunk diameter measurement of 18 inches or larger. Nonnative trees include species such as *Sequoia Sempervirens* (Coastal Redwood), *Pinus Canariensis* (Canary Island Pine), *Pinus Halepensis* (Aleppo Pine), *Pinus Pinea* (Italian Stone Pine), *Pinus Radiata* (Monterey Pine), *Ulmus Americana* (American Elm), *Ulmus Parvifolia* (Chinese Elm), *Ulmus Pumila* (Siberian Elm), *Liquidambar Styraciflua* (American Sweet Gum), *Cedrus Deodara* (Deodar Cedar), *Cedrus Atlantica* (Atlas Cedar), *Fraxinus Uhdei* (Shamel Ash), *Fraxinus American* (White Ash), *Fraxinus Augustifolia* (Raywood Ash), *Cupressus* (Cypress species), *Morus Alba* (Fruit/Fruitless Mulberry), Chinese Pistache, *Robinia Pseudoacacia* (Black Locust), *Pyrus Calleryana* (Bradford Pear), *Cinnamomum Camphora* (Camphor).
d. Any tree shown to be preserved on an approved tentative map, development or site plan or required to be retained as a condition of approval or environmental mitigation measure.
e. Any tree required to be planted as a replacement for an unlawfully removed tree.
f. Any tree designated as a "heritage tree" pursuant to subsection E of this section.

2. Arborist report required. Any application for a tree removal permit shall include a letter report prepared by a certified arborist addressing the health/condition of the tree, the rationale for removal, the feasibility of any alternatives to removal, and any recommendations for replacement trees.
3. Criteria for tree removal review. The zoning administrator, or other applicable city decision-making body, shall consider the following factors in determining whether to approve the removal of a tree or trees:
   a. Health or physical condition of the tree;
   b. Any potential hazard or any risk presented by the tree determined using the ANSI A-300, part 9 Standard for Tree Risk Assessment;
   c. Whether the tree is causing a public nuisance and/or a public safety hazard;
   d. Potential for the tree to be a detriment to other protected trees due to its location, overcrowding, or its health;
   e. Evidence of significant damage to property caused, or likely to be caused, by the tree;
   f. Any potential historic or cultural significance of the tree;
   g. Whether the tree substantially inhibits sunlight necessary for the operation of active or passive solar heating, cooling or energy generation and trimming or thinning is not a feasible alternative to removal;
   h. Whether the tree is obstructing proposed improvements that cannot be reasonably designed to avoid tree removal;

i. Whether the tree is located in close proximity to a structure in a high fire hazard area and removal is necessary to create defensible space per applicable fire safety laws, regulations or Fire District requirements;
j. Whether preservation of the tree(s) would render a site undevelopable and the planning commission or city council has determined that no economically viable use can be made of underlying or adjacent property if the tree is not removed and that every reasonable effort has been made to retain the tree;
k. Feasibility of alternatives to removal of the tree (for example, depending on the circumstances, abandonment in place of a natural gas pipeline that is over 30 years old and relocation of the pipeline may be deemed a feasible alternative);
l. Any other circumstances deemed relevant by the zoning administrator or other city decision-making body based on site conditions, technical analyses, and/or the location of the tree.

4. Third-party peer review arborist. When deemed necessary by the zoning administrator or other applicable city decision-making body, a third-party peer review prepared by a certified arborist, board certified master arborist or registered consulting arborist may be required (at the cost of the applicant) to: (a) review the applicant's arborist report and/or tree preservation and replacement plan, (b) physically inspect and evaluate the tree(s) proposed for removal, and (c) provide a written analysis to include the peer review arborist's findings, and recommendations. The peer review arborist's comments may also include recommendations regarding tree replacement.
5. Replacement trees required.
   a. Replacement ratios. Unless otherwise specified by the zoning administrator or other applicable city decision-making body, the replacement ratios for tree removal shall be as follows:
      i. A protected native or indigenous tree approved for removal shall be replaced by at least two 15-gallon trees on the project site or in the plan area.
      ii. A protected nonnative tree approved for removal shall be replaced by at least one 15-gallon tree on the project site or in the plan area.
      iii. In addition to the replacement requirements in subsections A.5.a.i and/or ii of this section, removal of any protected tree (native, indigenous or nonnative), as part of an area-wide program and/or discretionary development plan, that is located within or adjacent to the public right-of-way along Contra Costa Boulevard or within or adjacent to the Iron Horse Trail, may also be subject to additional mitigation requirements to address potential community-wide impacts of removals. Such additional mitigation, if required by the applicable city decision-making body, may include, but not be limited to, proportionate mitigation for adverse effects (individual and cumulative) on biological values, aesthetics, loss of shade, economic vitality, air quality, vehicle speed, community identity, and other similar factors, resulting directly or indirectly from tree removal, that have the potential to cause adverse community-wide social, economic or environmental effects due, in part, to the substantial length of time required for replacement trees to reach the same level of maturity and therefore provide the same functionality and benefits as the trees that are removed.

b. Replacement tree species. The species of the replacement trees shall be approved by the zoning administrator or other applicable city decision-making body.
c. Off-site replacement. Off-site tree replacement may be considered in the event that the project site or plan area already has a significant mature tree population, to prevent overcrowding or infringement on existing structures, provided adequate provisions for maintenance of the replacement tree are specified, subject to approval by the planning commission.
d. Replacement infeasible. Where the planning commission or city council has determined that on-site or off-site replacement of trees is not currently feasible, the planning commission or city council may, at its discretion, allow the applicant to make an in lieu payment to the city for provision of off-site trees at the ratio recommended in subsection A.5.a of this section. The in lieu fee shall be based on the estimated value of the replacement tree(s) including any installation and maintenance costs. If the zoning administrator or other applicable city decision-making body determines that on-site or off-site replacement would not be feasible (due to lack of adequate space on site or lack of a suitable and available off-site location), the tree replacement requirement may be reduced or waived, as appropriate. For trees removed within or adjacent to Contra Costa Boulevard and/or within or adjacent to the Iron Horse Trail, additional mitigation for each tree removed may be required as specified in subsection A.5.a.iii of this section.
e. Maintenance. Replacement trees shall be properly maintained by the permittee to ensure their survival. Replacement trees on single family residential sites shall be maintained for a minimum of two years after planting. Replacement trees on all other sites shall be maintained as noted in any landscape maintenance agreement and/or city approved landscape plan or tree preservation and replacement plan applicable to the site.

B. Exemptions. A tree removal permit is not required prior to removal of a protected tree under any of the following circumstances:

1. Removal is determined necessary by fire department personnel actively engaged in fighting a fire.
2. Immediate removal is required to prevent imminent danger to life or property, such as with a "hazardous tree" as defined in subsection G.4 of this section or if necessary to restore utility service within 48 hours of a storm, and the city manager or his/her designee has been notified of the removal at the earliest opportunity, and it is not feasible to obtain a permit prior to removal (in which case a tree removal permit shall be submitted within five days of removal to ensure that the provisions of this chapter and any other applicable provisions of the municipal code or applicable land use entitlements are satisfied).
3. The tree is held for sale as part of a licensed nursery business.
4. A subdivider or developer need not obtain a separate tree removal permit to remove, relocate or demolish a tree designated as "To Be Removed" on an approved subdivision map (tentative map or parcel map) or development plan provided that the tree removal has been reviewed and approved by the decision-making body for the subdivision map and/or development plan based on the criteria in subsection A.3 of this section and a

tree preservation and replacement plan has been approved pursuant to subsection C of this section.

5. The zoning administrator determines that the tree is dead. The zoning administrator may require submittal of a report from a licensed arborist if deemed necessary to verify the condition of the tree. A fee shall not be required for a determination by the zoning administrator that a tree is dead. Dead trees that are removed shall not require replacement unless located on a site with a city-approved landscape plan or landscape maintenance agreement, in which case, the dead tree shall be replaced on a 1:1 basis.
6. Tree trimming that does not constitute "excessive trimming" as defined in this chapter.
7. If a governmental entity or a public or private utility believes it is exempt from this section by federal or state statute, regulation or administrative order, such entity shall provide a copy of such statute, regulation or order to the zoning administrator for approval.

C. Tree preservation and replacement plan. A tree preservation and replacement plan prepared by a state licensed or certified professional shall be submitted by the applicant in conjunction with any discretionary land use entitlement application that includes removal of protected trees (excluding an entitlement involving only one single-family residence where the zoning administrator may administratively require tree protection measures as needed if a proposed development has the potential to adversely impact a protected tree); in addition, a tree preservation and replacement plan may also be required by the zoning administrator or other applicable city decision-making body as a condition of tree removal permit approval. The tree preservation and replacement plan shall be subject to the review and approval of the zoning administrator or other applicable city decision making body and shall include:

1. A map and inventory showing the location, species, health rating, size, and a unique tree number for all trees on the site. The trees to be removed, relocated, or demolished shall be labeled "To Be Removed" or marked with an "X" and the inventory shall indicate by notation why removal of each tree is necessary based on the criteria included in subsection A.3 of this section.
2. A report from a certified arborist, board certified master arborist or registered consulting arborist describing the condition of all existing trees, the anticipated impacts of grading, trenching and construction on the protected trees and recommending specific protective measures to be implemented prior to commencement of grading or construction to minimize potential adverse impacts on protected trees. The report shall designate tree protection zones (TPZ) for each protected tree and/or group of protected trees that are proposed to remain on site and the additional measures such as protective fencing, staking and signage necessary to avoid inadvertent damage to protected trees during grading and construction. The TPZ is a restricted activity zone where soil disturbance, storage or parking of vehicles, storage of any other materials or chemicals and/or alteration of drainage is not permitted, unless otherwise approved by the city. All required tree protection measures shall also be included with the grading and/or construction documents for the development.
3. A replanting plan prepared by a licensed landscape architect or other professional approved by the city for replacement of each tree removed as required by the zoning administrator or other applicable city decision-making body. The planting plan shall

include replacement trees as required pursuant to subsection A.5 of this section and shall conform with ANSI A-300 Standard Part XXX (Planting).

4. Provisions to ensure ongoing maintenance of any required replacement trees.

D. Performance security. To ensure the safety and well-being of existing protected trees that may be impacted by grading or construction and/or any replacement trees required to be planted pursuant to this chapter, the zoning administrator or other applicable city decision-making body may, at its discretion, require an applicant to post a cash deposit or other performance security acceptable to the city guaranteeing that each such tree will be protected against harm from grading or construction and will be adequately maintained. The performance security must be posted with the zoning administrator prior to issuance of grading permits and shall be governed by the following provisions:
   1. The zoning administrator shall establish the amount of the performance security which shall be equal to the estimated value of the protected trees.
   2. The performance security shall remain in effect for a period of five years (or two years for single-family residential sites) following the date of final inspection and acceptance of the project or plan by the City.
   3. The performance security shall provide that if the city determines that a protected tree has been removed, permanently damaged, or destroyed due to development activity during the effective period of the performance security, the city is entitled to recover the face amount of the performance security.
   4. If, at the expiration of the effective period of the performance security the city determines that the protected trees have not been removed, permanently damaged, or destroyed due to development activity, the performance security shall be refunded or the surety bond terminated.

E. Heritage trees. Notwithstanding any other provisions of this chapter, a tree which is enrolled in the city's heritage tree program may not be removed, relocated, damaged or demolished, and no permit or tree preservation and replacement plan authorizing such action may be issued, unless the zoning administrator or other applicable city decision-making body determines that there exists a hazard to property or danger of disease or infection to surrounding healthy trees.
   1. Eligibility. Any tree in the city with a trunk diameter measurement of 16 inches or more or any tree grouping in the city with at least one tree of this diameter is eligible for enrollment in the heritage tree program, with the consent of the property owner.
   2. Enrollment. The zoning administrator shall review and approve applications for enrollment in the heritage tree program unless an eligible tree or tree grouping is unhealthy and cannot be saved.

F. Conditions. The zoning administrator or other applicable city decision-making body may impose reasonable conditions of approval on a tree removal permit, consistent with the purposes of this chapter, to ensure safe and unobtrusive tree removal, replacement, relocation, and demolition; maintenance of replacement trees; and protection of trees not approved to be removed. It shall be a violation of this chapter for any property owner or agent of the owner to fail to comply with any condition of approval or other requirement pursuant to this chapter.

18.50.150 Creek setbacks

A. Regulation. No person may place a structure (as defined in subsection B of this section), perform grading, or place fill material in a creek setback area unless:
   1. The property is adjoining a concrete channel owned by a public agency; or
   2. The structure, grading or fill was legally existing as of February 24, 2010. Such a structure, grading or fill may be replaced in kind if the property owner obtains a building permit within 18 months (within the same building footprint and without increasing the degree of nonconformity) without the requirement of a use permit under PHMC § 18.65.030.C; or
   3. The property qualifies for an exception under subsection C of this section.

Depth of Creek	Creek Setback Area, from Top of Creek Bank
Up to 5 feet	5 feet
Over 5–10 feet	10 feet
Over 10–15 feet	15 feet
Over 15 feet	subject to City Engineer review

(The depth of the creek bed is measured at its deepest point to a point level with the top of creek bank.)

Structure means: a structure as defined in PHMC § 18.140.010. Examples of structures include, but are not limited to: a house addition or second unit; garage; swimming pool or hot tub; arbor; shed; deck; retaining wall; and wall of concrete, masonry or stone. If any uncertainty exists, the zoning administrator shall determine whether or not a structure is regulated. (PHMC § 18.10.040.A)

The *top of the creek bank* means the highest edge of the creek channel at the location where the structure, grading or fill is proposed, as determined by the director of public works and community development.

3.3.4 - Impacts and Mitigation Measures

The 2019 CEQA Guidelines Appendix G, identify the following questions, to determine whether impacts related to biological resources are significant environmental effects. Would the proposed plan:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game 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, and regulations or by the California Department of Fish and Game 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 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?

Approach to Analysis

FCS Biologists evaluated impacts on biological resources based on the likelihood that special-status species, sensitive habitats, wildlife corridors, and protected trees are present within the plan area, and the likely effects of construction or operation on these resources. For the purposes of this EIR, the word "substantial" as used in the significance thresholds above is defined by the following three principal components:

- Magnitude and duration of the impact (e.g., substantial/not substantial),
- Uniqueness of the affected resource (rarity), and
- Susceptibility of the affected resource to disturbance.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of biological resources impacts resulting from implementation of the proposed plan.

- Result in direct take or habitat removal or alteration for candidate, sensitive, or special-status species.
- Remove vegetation or damage water quality related to riparian habitat or other sensitive natural community.
- Remove, fill, or damage a federally protected wetland.
- Interrupt fish movement in an aquatic channel or impede terrestrial movement via a land corridor.
- Remove, damage, or replace trees designated as protected by the City of Pleasant Hill Tree Ordinance.
- Conflict with the provisions of an applicable habitat conservation plan.

Impact Evaluation

Special-Status Species

Impact BIO-1: **The proposed plan could have a substantial adverse effect, either directly or indirectly through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.**

Construction

An impact to special-status plant and wildlife species would be considered significant if construction of the Civic Project or Residential Project resulted in a substantial, adverse change in any of the physical conditions through habitat modification, or impacts to special-status species within the plan area.

Civic Project

Proposed construction within the Civic Project site has the potential to adversely impact special-status wildlife species. Most notably, the Civic Project would remove potential nesting habitat throughout the Civic Project site, through vegetation removal associated with the construction of a new library, park, athletic fields, and road improvements. Construction of the Civic Project could also temporarily impact the Grayson Creek area through the installation/replacement of three stormwater pipe outfalls to the Creek.

Special-Status Plant Species

Special-status plant species or communities are unlikely to occur on the Civic Project site, based on multiple database searches, literature review, and on-site field survey observations. The Special-Status Species Table (Appendix D) provides both the habitat description and a description of the potential for special-status plant species to occur on the Civic Project site. The Civic Project site does not contain suitable habitat components for special-status plant species, including vernal pools, chaparral, serpentine soils, and coastal scrub.

None of the 18 special-status plant species identified in the Special-Status Species Table were observed or expected to be present on the Civic Project site. Based on FCS Biologist field surveys, the project-specific biological constraints report, and the lack of suitable habitat coupled with the level of disturbance experienced on the Civic Project site, no impacts to special-status plants or plant communities are expected to result from construction of the Civic Project.

Special-Status Wildlife Species

Three special-status wildlife species (Townsend's big-eared bat, pallid bat, and western pond turtle) as well as birds protected under the MBTA have the potential to occur on the Civic Project site.

The western pond turtle has the potential to occur due to the marginal habitat found within Grayson Creek. Townsend's big-eared and the pallid bat have the potential to occur due to marginal roosting habitat found in mature oak and pine forested areas, as well as foraging habitat present within the creek corridor, and around light posts. Furthermore, birds protected under the MBTA have the potential to occur based on the presence of suitable nesting and foraging habitat found within the Grayson Creek Corridor. Construction within the Civic Project site would remove trees and would

generate disturbance within the Grayson Creek Corridor, therefore rendering the site temporarily unsuitable for the special-status species listed above because of noise, vibrations, and increased activity levels associated with the construction activities.

Temporary impacts could also include a temporary reduction in nesting habitat through the removal of trees. Both of these circumstances represent a potentially significant impact. However, implementation of Mitigation Measure (MM) BIO-1a, MM BIO-1b, and MM BIO-1c would require biological clearance surveys prior to commencement of construction activities and, if species protected pursuant to the Migratory Bird Treaty Act are present, require necessary buffer zones. Buffer zones would be established by a qualified biologist, and would be identified in consultation with the CDFW, where required. The Civic Project also would establish 252 trees throughout the Civic Project site to compensate for removals associated with construction (159 trees as part of the new library, 23 trees as part of the new park, and a minimum of 70 trees along Oak Park Boulevard and Monticello Avenue).

In addition, MM BIO-2b would require that the City file a notification of Lake and Streambed Alteration Agreement with CDFW and implement measures to avoid and minimize impacts to riparian habitat. Design measures and best management practices will be implemented that restrict the use and location of the types of construction equipment to be utilized after clearance surveys have been completed. The Civic Project would also be required to adhere to the City's noise ordinance policy and MM NOI-1 (described in more detail in Section 3.10, Noise, under Impact NOI-1) to reduce noise impacts during construction activities.

The City would obtain the applicable State and federal permits required to address potential impacts to wildlife habitat within the Grayson Creek Corridor. The permits would require the City to avoid, minimize and compensate for potential impacts to wildlife and or riparian habitat during construction of the Civic Project through appropriate mitigation measures (described in more detail under MM BIO-2a and MM BIO-2b). Therefore, impacts to special-status wildlife expected to result from construction of the Civic Project would be less than significant with the implementation of mitigation measures prescribed above.

Residential Project

Proposed construction of the Residential Project site would require demolition of existing buildings and hardscaped/paved areas, including administrative offices, the County library building, the paved parking lot, trees, and landscaping. These impacts have the potential to adversely impact special-status wildlife species through the removal and disturbance of potential nesting habitat.

Special-Status Plant Species

Special-status plant species or communities are unlikely to occur on the Residential Project site, based on multiple database searches, literature review, and on-site field survey observations. The Special-Status Species Table (Appendix D) provides both the habitat description and the rationale of the potential of special-status plant species to occur on the Residential Project site. The Residential Project site does not contain suitable habitat components for special-status plant species, including vernal pools, chaparral, serpentine soils, and coastal scrub.

None of the 18 special status plant species in the Special-Status Species Table are present on the Residential Project site. Based on Biologist field surveys, the project-specific biological constraints report, and the lack of suitable habitat coupled with the level of disturbance that has occurred on the Residential Project site, no impacts to special-status plants or plant communities are expected to result from construction of the Residential Project.

Special-Status Wildlife Species

Both the Townsend's big-eared bat and the pallid bat have the potential to occur on the Residential Project site due to the roosting habitat found within the vacant buildings, in mature trees surrounding the buildings, as well as marginal foraging habitat present around light posts. Additionally, birds protected under the MBTA have the potential to occur based on both suitable nesting and foraging habitat found within mature vegetation on the Residential Project site. Construction within the Residential Project site would remove trees, rendering the site temporarily unsuitable for the special-status species listed above because of noise, vibrations, and increased activity levels associated with the construction activities. This would represent a potentially significant impact.

However, MM BIO-1a and MM BIO-1b would require biological clearance surveys prior to commencement of construction activities and, if bird nests or bats are present, require necessary buffer zones of at least 50 feet (for common migratory species) and up to 300 feet (for large raptors) to be established by a qualified Biologist, in consultation with the CDFW. The Residential Project also would establish 216 trees throughout the Residential Project site to compensate for removals associated with construction.

The Residential Project would also be required to adhere to the City's noise ordinance policy and MM NOI-1 (described in more detail in Section 3.10, Noise, under Impact NOI-1) to reduce noise during construction activities.

Therefore, impacts to special-status wildlife due to the construction of the Residential Project would be less than significant with the mitigation measures prescribed above.

Operation

Civic Project

The Civic Project site would increase traffic on local roadways and introduce stationary noise sources through the operation of new recreational facilities. The Civic Project site is located in a highly urbanized environment surrounded by single-family housing, multiple existing recreation facilities, and highly trafficked roadways. As noted in Section 3.10, Noise, noise emitted from the operation of the Civic Project would be within established standards and thus would not constitute a significant impact to wildlife species. Remaining potential impacts related to the operation of the Civic Project potential effect on special-status species are limited to construction impacts. As such, all operational impacts would be considered less than significant.

Residential Project

The Residential Project site would increase stationary noise associated through the installation of mechanical ventilations systems. Similar to the Civic Project site, noise emitted from the operation

of the Residential Project site would not generate noise levels that would exceed the City's noise thresholds. Furthermore, the Residential Project site is located in a highly urbanized environment surrounded by single-family housing, multiple existing recreation facilities, and highly trafficked roadways and would generally function in a similar capacity. Noise emitted from operation of the Residential Project would not have a significant impact on wildlife species. The remaining potential impacts related to the operation of the Residential Project sites potential effect on special-status species are limited to construction impacts. As such, all operational impacts would be considered less than significant.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

Implement MM BIO-2 (Civic Project only) and MM NOI-1 (Civic Project and Residential Project) and the following measures:

MM BIO-1a Avoid Active Migratory Bird Nests During Construction

Civic Project and Residential Project: The following measures shall be implemented for construction work during the nesting season (February 15 through August 31):

- Implementation of the following avoidance and minimization measures would avoid or minimize potential effects to migratory birds and habitat in and adjacent to the Civic Project and Residential Project sites. These measures shall be implemented for construction work in the plan area that occurs during the nesting season (February 15 through August 31):
  - If construction or tree removal is proposed during the breeding/nesting season for migratory birds (typically February 15 through August 31), a qualified Biologist shall conduct pre-construction surveys for northern harrier and other migratory birds within the construction area, including a 300-foot survey buffer, no more than 3 days prior to the start of ground disturbing activities in the construction area.
  - If an active nest is located during pre-construction surveys, USFWS and/or CDFW (as appropriate) shall be notified regarding the status of the nest. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal. Restrictions shall include consultation with a qualified Biologist to determine appropriate exclusion zones (no ingress of personnel or equipment at a minimum radius of 300 feet around an active raptor nest and 50-foot radius around an active migratory bird nest) or alteration of the construction schedule.
  - A qualified biologist shall delineate the buffer using nest buffer signs, environmentally sensitive area fencing, pin flags, and or flagging tape. The buffer zone shall be maintained around the active nest site(s) until the young have fledged and are foraging independently.

MM-BIO-1b Avoid Active Migratory and Nesting Bats Roosts During Construction

Civic Project and Residential Project: The following measures shall be implemented prior to construction work related to building, other structure, or tree removal or modification in the plan area:

- If suitable roosting habitat for special-status bats will be affected by Civic and Residential Project construction (e.g., removal of buildings or trees, modification of bridges), a qualified wildlife biologist will conduct surveys for special-status bats during the appropriate time of day to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days prior to beginning ground disturbance and/or construction. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (Anabat, etc.). Visual surveys will include trees within 0.25 mile of construction activities, where practicable. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study is required.
- If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts.
- If roosts are determined to be present and must be removed, the bats will be excluded from the roosting site before the facility is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed prior to implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but cannot not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young).
- If roosts cannot be avoided or it is determined that construction activities may cause roost abandonment, such activities may not commence until permanent, elevated bat houses have been installed outside of, but near the construction area. Placement and height will be determined by a qualified wildlife biologist, but the height of the bat house will be at least 15 feet. Bat houses will be multi-chambered and will be purchased or constructed in accordance with CDFW standards. The number of bat houses required will be dependent upon the size and number of colonies found, but at least one bat house will be installed for each pair of bats (if occurring individually), or of sufficient number to accommodate each colony of bats to be relocated.

MM-BIO-1c Avoid Active Turtle Dens During Construction

Civic Project: The project sponsors for the Civic Project shall implement the following measures for construction work on the Civic Project site during the overwintering season (October 1 through February 28/29):

- The project sponsors for the Civic Project shall avoid construction on the Civic Project site when western pond turtle adults and hatchlings are overwintering (October 1 to February 28/29), because of the likelihood that turtle adults and juveniles could be present in upland habitats (i.e., the ruderal field adjacent to the Creek Corridor). If construction activities must occur during this time frame, a survey for overwintering locations shall be conducted no more than 14 days prior to construction. If this species is found overwintering within the Civic Project site, den locations shall be avoided until the area is unoccupied, as determined by a qualified biologist.
- No more than 30 days prior to the first ground-disturbing activities, the project sponsors for the Civic Project shall retain a qualified wildlife biologist to conduct a focused survey for western pond turtle to determine presence or absence of this species within a 100-foot radius of the disturbance area. If construction occurs between April 1 and September 30, this survey shall include turtle nests. If a nest is found within a 100-foot radius of the Civic Project site, construction shall not take place within 100 feet of the nest until the turtles have hatched or the eggs have been moved to an appropriate location under consultation with a qualified biologist.
- Before any activities begin on the Civic Project, an approved biologist will conduct a Worker Environmental Awareness Program (WEAP) for all construction personnel. At a minimum, the training will include a description of the western pond turtle and its habitat, the specific measures that are being implemented to conserve western pond turtle on the Civic Project site. Brochures, books, and briefings may be used in the WEAP, provided that a qualified person is on hand to answer any questions.
- Revegetation will occur with an assemblage of native riparian/wetland and riparian upland vegetation suitable for Grayson Creek and its associated riparian corridor. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable during construction. This measure will be implemented by the City in all areas disturbed by activities associated with Grayson Creek and its associated riparian corridor, unless the CDFW and project sponsors for the Civic Project determine that it is not feasible or practical.
- The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary. Environmentally Sensitive Areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to western pond turtle habitat; this goal includes locating access routes and construction areas outside of riparian areas to the maximum extent practicable.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Sensitive Natural Communities

Impact BIO-2: **Development of the proposed Civic Project could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.**

Construction

An impact to sensitive natural communities or riparian habitat would be considered significant if the construction of the Civic Project or Residential Project resulted in a substantial, adverse change in any of the physical conditions (such as removal of vegetation or fill within riparian habitat) within the area affected by development in the plan area. Impacts to sensitive natural communities, specifically riparian habitat are discussed in detail below.

Civic Project

Habitat Modification

Grayson Creek extends through the eastern portion of the Civic Project site. Grayson Creek, a jurisdictional drainage, is part of the 100-year floodplain and is within the jurisdiction of the Contra Costa County Flood Control District. The Creek and its associated habitat are considered a sensitive natural community under CEQA. As discussed in the Jurisdictional Delineation prepared for the Civic Project site, direct Civic Project impacts would result in 0.039 acres of permanent fill and 0.054 acres temporary disturbance to waters of the United States. Civic Project features resulting in permanent fill include modification of three existing outfall structures, as well as associated bank stabilization measures using bioengineering components that have been designed to conform to the existing variable topography of the creek. The proposed grading will be kept to the minimum necessary to install the outfalls and provide safe access to personnel and small machinery. Temporary impacts include the localized loss of vegetation and general disturbance to soils during construction to build the stormwater facilities safely. A potential future pre-cast pedestrian bridge across Grayson Creek may be installed, connecting the EBMUD trail to the proposed pedestrian trail on the Civic Project site. The bridge may be constructed once funding is secured. Construction of the Civic Project would result in direct (through habitat modification and fill) and indirect impacts (temporary construction disturbance) to riparian habitat and the on-site aquatic resources below the ordinary high water mark. This represents a potentially significant impact.

Implementing the avoidance, minimization and mitigation measures set forth in the 404/401/1602 permits and agreements as outlined in MM BIO-2a and MM BIO-2b would address potential direct and indirect impacts to the Grayson Creek and its riparian corridor. Integration of brush layering, pole planting, and live siltation techniques will be used during riprap placement to ensure contact with native ground. Willow cuttings will be planted deeply into the water table. A graded granular filter or filter fabric will be used to improve root penetration; and cobbles, gravel, and soil will be placed around cuttings. Cuttings planted within the riprap will increase the strength and structure of the soils via root systems and aboveground biomass while also adding strength, durability, and reliability to the riprap by binding stone and soil layers together. Vegetation will help to provide a natural streambank and buffer along the creek, which is currently absent. The combination of riprap and vegetation will provide an overall improvement to habitat function and erosion control from its

current state. The vegetated rock riprap treatment represents both the permanent direct impacts and the bank stabilization and restoration area, or 242.2 linear-feet (0.039-acre) of bank stabilization using locally harvested willows, most likely sandbar willow (*Salix exigua*). Temporary disturbance areas (0.054-acre) will be revegetated after construction. While the temporary disturbance areas are currently dominated by nonnative grasses and shrubs, they will be seeded with a native seed mix after construction is finalized. The following seed mix will be applied to temporary disturbance areas and will be included in the Habitat Mitigation Monitoring and Reporting Plan (HMMRP) being prepared as part of the regulatory permitting for the Civic Project.

Table 3.3-2: Seed Mix for Temporary Disturbance Area

Botanical Name	Common Name	Application Rate lbs./Ac.
Bromus carinatus	Native California Brome	10 PLS pounds per acre
Elymus glaucus	Blue Wildrye	8 PLS pounds per acre
Hordeum californicum	California Barley	8 PLS pounds per acre
Festuca idahoensis	Idaho Fescue	5 PLS pounds per acre
Nassella pulchra	Purple Needlegrass	5 PLS pounds per acre
Poa secunda	Native Pine Bluegrass	4 PLS pounds per acre
Eschscholzia californica	California Poppy	1.5 PLS pounds per acre
Lupinus nanus	Sky Lupine	3 PLS pounds per acre
Clarkia rubicunda,	Wine Cup Clarkia	1.5 PLS pounds per acre
Achillea millifolium	White Yarrow	0.5 PLS pounds per acre
Sisyrinchium bellum	Blue Eyed Grass	3.5 PLS pounds per acre
Vulpia microstachys	Six Weeks Fescue	8 PLS pounds per acre (Nurse Crop)
Note: PLS = Palletized Load System		

Native bunch grasses and shrubs will be planted to enhance the understory, especially in areas currently dominated by nonnative Himalayan blackberry (*Rubus armeniacas*). The planting plan and planting palette are being developed as part of the HMMRP in support of the regulatory permit process, and will include the seed mix above as well as container plantings to enhance the riparian understory (e.g., deergrass, coyote brush, etc.). Implementation of the HMMRP within Grayson Creek could result in additional minimal disturbance, associated with the installation of planting and irrigation to ensure the success of planted species.

The Civic Project would be developed in a manner consistent with the City's creek setback requirements and construction noise requirements, which limit the hours of construction and required setback for structures from top of bank based on the depth of the creek. Therefore, construction habitat modification impacts on riparian habitat would be less than significant with mitigation.

Noise

Potential construction noise impacts within the Grayson Creek Corridor would be mitigated through the implementation of measures required by the CDFW 1602 Streambed Alteration Agreement (MM BIO-2), mitigation requiring pre-construction clearance surveys, and avoidance, monitoring, and protection measures for potential nesting birds, roosting bats, and western pond turtle prior to and during construction activities (MM BIO-1a–MM BIO-1c), and MM NOI-1 requiring noise reduction during construction activities. Therefore, construction noise impacts on riparian habitat and associated wildlife communities would be less than significant with mitigation.

Residential Project

No sensitive biological communities are present on the Residential Project site. In addition, no potential jurisdictional wetlands or features are located on the site that would be considered sensitive under CEQA. Rather, the Residential Project site is covered largely with impervious surfaces and some ruderal vegetation. Therefore, no construction impacts related to riparian habitat or other sensitive natural communities on would occur.

Operation

Civic Project

Impacts related to the Civic Project's potential effect on riparian habitat or sensitive natural communities are limited to construction impacts. No respective operational impacts would occur as Grayson Creek and its associated riparian corridor will function in an improved capacity through the vegetated riprap treatments, revegetation of temporary disturbance area, and removal of exotic/non-native plant species.

Residential Project

No sensitive biological communities are present on the Residential Project site that could be affected by operation of the Residential Project. Therefore, no operational impacts related to sensitive natural communities would occur.

Level of Significance Before Mitigation

Potentially Significant (Civic Project)

No Impact (Residential Project)

Mitigation Measures

Implement MM BIO-2 (Civic Project only) and MM NOI-1 (Civic Project only) and the following measures:

MM BIO-2a Obtain CWA Sections 401 and 404 Permits Prior to Construction

Civic Project: Prior to the fill of any potentially jurisdictional waters as part of the Civic Project, the project sponsors for the Civic Project shall consult with the USACE to determine the extent, if at all, that waters of the United States may be impacted by the Grayson Creek Outfalls Project. This consultation may include a jurisdictional delineation.

If potential jurisdictional waters cannot be avoided, the following steps shall be adhered to with regard to permits:

- The project sponsors for the Civic Project shall obtain a Section 404 Clean Water Act (CWA) permit for impacts to waters of the United States. The City shall also obtain a Section 401 water quality certification from the RWQCB. This permit and certification shall be obtained prior to issuance of grading permits for the implementation of the proposed Grayson Creek Outfalls Project.
- The project sponsors for the Civic Project shall design the Civic Project to result in no net loss of functions and values of waters of the United States by incorporating impact avoidance, impact minimization, and/or compensatory mitigation for the impact, as determined in the Section 404permit and 401 water quality certification.
- Compensatory mitigation may consist of (1) obtaining credits from a mitigation bank; (2) making a payment to an in-lieu fee program that will conduct wetland, stream, or other aquatic resource restoration, creation, enhancement, or preservation activities; and/or (3) providing compensatory mitigation through an aquatic resource restoration, establishment, enhancement, and/or preservation activity. This final type of compensatory mitigation may be provided at or adjacent to the impact site (i.e., on-site mitigation) or at another location, usually within the same watershed as the permitted impact (i.e., off-site mitigation). The project/permit applicant retains responsibility for the implementation and success of the mitigation project.

MM BIO-2b File Notification of Streambed Alteration Agreement Prior to Construction

Civic Project: In order to protect the long-term habitat of Grayson Creek, the project sponsors for the Civic Project shall ensure that the Creek is not obstructed and human intrusion into the riparian area is minimized. In compliance with Section 1600 of the California Fish and Game Code, the project sponsors for the Civic Project shall file a notification of a Streambed Alteration Agreement prior to conducting any construction activities within the creek corridor, defined by the CDFW as the top of bank plus the outer edge of the dripline of riparian vegetation. Measures shall include but not be limited to the implementation of erosion and bank stabilization measures, riparian habitat enhancement, and/or restoration and revegetation of the stream corridor habitat at no less than a 1:1 ratio. The details of this mitigation effort shall be outlined in a riparian habitat mitigation plan that shall be implemented as part of the construction of the outfalls.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project)

No Impact (Residential Project)

Wetlands

Impact BIO-3:	**The proposed plan would not 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.**

Construction

Impacts to State or federally protected wetlands would be considered significant if the proposed operations resulted in a substantial, adverse change in any of the physical conditions (i.e. fill) of wetlands.

Civic Project

There are no State or federally protected wetlands on, or adjacent to, the Civic Project site. Grayson Creek is considered riparian habitat and contains waters of the United States; it does not contain State or federally protected wetlands. Potential impacts to waters of the United States are discussed under Impact BIO-2 above. As noted above in Section 3.3.1, a wetland assessment/due diligence memo found no evidence of wetlands on, or adjacent to, the Civic Project site. As such, there are no wetlands on the Civic Project site that could require filling or removal or could experience water quality or other degradation due to construction of the Civic Project. Therefore, no impact related to effect on State or federal wetlands would occur due to construction.

Residential Project

There are no State or federally protected wetlands on, or adjacent to, the Residential Project site. As noted above in Section 3.3.1, a wetland assessment/due diligence memo found no evidence of wetlands on, or adjacent to, the Residential Project site. As such, there are no wetlands on the Residential project site that could require filling or removal or could experience water quality or other degradation due to construction of the Residential Project. Therefore, no impact related to effect on State or federal wetlands would occur due to construction.

Operation

Civic Project

The Civic Project would not result in potential operational impacts to wetlands because there are no wetlands present in the Civic Project site.

Residential Project

The Residential Project would not result in potential operational impacts to wetlands because there are no wetlands present in the Residential Project site.

Level of Significance

No Impact (Civic Project and Residential Project)

Fish and Wildlife Movement Corridors

Impact BIO-4: **The proposed plan would not substantially interfere with the movement of 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.**

Construction

An impact to fish or wildlife movement would be considered significant if the proposed construction or operation resulted in a substantial, adverse change in any of the physical conditions (such as the interruption of a channel or terrestrial movement corridor) within the area affected by the proposed plan. Fish or wildlife movement that have the potential to be impacted are discussed in detail below.

Civic Project

The eastern portion of the Civic Project site contains Grayson Creek. The Creek has the potential to act as a nursery site or support wildlife movement through the Civic Project site; however, the Civic Project development would be required to adhere to the City's creek setback requirements. As noted in the discussion under Impact BIO-1, special-status wildlife species and bird species protected under the Fish and Game Code and MBTA have the potential to occur within the Civic Project site and may support the movement of these species within the Grayson Creek Corridor. Construction of the Civic Project has the potential to interfere with the movement of wildlife through upgrading three outfalls and the construction of a potential future bridge crossing over Grayson Creek (connecting the EBMUD trail to the proposed pedestrian trail on the Civic Project site). Given the perennial water and associated riparian habitat in Grayson Creek, species may use this creek for migration and defense from predation. These species include the western pond turtle, pallid bat, and Townsend's big-eared bat. This represents a potentially significant impact.

Compliance with MM BIO-1a through MM BIO-1c in addition to federal and State regulations related to the protection of migratory fish and wildlife species, including the creek setback Policy 18.50.150 in the City's Municipal Code, would reduce impacts to these species. Adherence to the City's creek setback requirement would allow the creek to continue to operate as a natural corridor by providing a buffer area through a development setback. Adherence to the setback requirement, avoidance and protection measures for species potentially utilizing the creek corridor, and compliance with federal, state, regulations related to the protection of migratory fish and wildlife species would result in less than significant impact. Therefore, Civic Project construction impacts related to wildlife movement and corridors would be less than significant with mitigation.

Residential Project

The Residential Project site is situated within a developed landscape. The area consists of a mix of commercial, retail, and residential developments. Urban development, highly trafficked roads, and high levels of human activity are existing barriers to wildlife movement. Therefore, construction of the Residential Project would not 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 wildlife nursery sites. Thus, there would be no Residential Project construction impact related to wildlife movement and corridors.

Operation

Civic Project

Lighting

The eastern portion of the Civic Project site contains Grayson Creek. As part of the Civic Project operation, exterior nighttime lighting for the library and pedestrian pathway, as well as athletic field and parking lot use noise would be associated with the proposed park and proposed library uses. The proposed park (athletic fields) lighting system would include 11 poles ranging in heights of 40 to 70 feet, and the athletic fields would be used Monday through Friday after school until 10:00 p.m., and on Saturdays and Sundays from 8:00 a.m. to 10:00 p.m. Lighting along the pedestrian pathway would also be shut off at 10:00 p.m.

Photometric plans were peer-reviewed by an independent consultant and adjustments were made where needed to ensure that light trespass would not exceed City standards. It is anticipated that the 10:00 p.m. cut off for use of the athletic fields coupled with additional native-species[15] planting required by MM BIO-2b would reduce any direct or indirect nighttime lighting impacts to wildlife movement within the Creek corridor to less than significant. Therefore, Civic Project operational impacts related to lighting would be less than significant with mitigation.

Residential Project

The Residential Project site is located approximately 600 feet or more from the Grayson Creek Corridor. Proposed residential development would include exterior lighting that is typical for this type of use, and would be subject to the city's requirements related to light trespass. The distance from the creek corridor and intervening development would preclude the potential for disturbance related to wildlife movement. Therefore, Residential Project operational impacts related to lighting would be less than significant.

Level of Significance Before Mitigation

Potentially Significant (Civic Project)

Less Than Significant (Residential Project)

Mitigation Measures

Implement MM BIO-1a through MM BIO-1c (Civic Project)

No mitigation is necessary (Residential Project)

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project)

Less Than Significant (Residential Project)

[15] Regarding a specific ecosystem, a species that, other than as a result of an introduction, historically occurred, or currently occurs in that ecosystem (USFWS)

Local Biological Resources Policies/Ordinances Consistency

Impact BIO-5: The proposed plan could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Construction

Pleasant Hill Municipal Code Section 18.50.110 governs tree preservation, and Section 18.50.150 governs creek setbacks. A significant impact would result if construction or operation of the Civic Project or Residential Project would conflict with these policies and provisions. Conflicts with these ordinances protecting biological resources are discussed below.

Civic Project and Residential Project

Pleasant Hill's Tree Preservation Ordinance designates "protected trees" as any native or indigenous tree with a 9-inch or greater diameter at 54 inches above the ground or a non-native tree with a 18-inch or greater diameter at 54 inches above the ground, and would require a tree preservation and replacement plan and tree removal permits. For commercial sites, non-protected trees are replaced at a 1:1 ratio, and protected trees are replaced by two trees for each protected tree removed. A tree preservation plan must be approved by the City. The arborist report assessed the location, health, and species of 302 trees found on, or adjacent to, the plan area. Of the 302 trees found on-site, 154 are protected by the City's Tree Preservation Ordinance.[16] Removal of protected trees under the Civic Project and Residential Project would represent a potentially significant impact.

As the construction of the Civic and Residential Projects requires the removal of a tree(s) subject to Pleasant Hill Municipal Code Section 18.50.110, tree permits would be required prior to the removal of such protected trees (per MM BIO-5a). In addition, the remaining trees that are proposed for preservation within the plan area would be protected through the implementation of the pre-, during, and post-construction tree protection guidelines identified and outlined in the project-site-specific arborist report (per MM BIO-5b through MM BIO-5d).

As a part of approval for on-site development, the Residential Project developer and Civic Project developer would be required to demonstrate and implement consistency with the City's tree ordinance, including tree removal permits and protection of preserved trees. Therefore, impacts related to consistency with local policies or ordinances that protect biological resources would be less than significant with mitigation.

Operation

Civic Project and Residential Project

Impacts related to the consistency of the Civic Project and Residential Project with local biological resources policies and ordinances are limited to construction impacts. Because the project sponsors for the Civic Project and the Residential Project would be required to monitor, protect, and maintain preserved trees, no respective operational impacts under the Civic Project or Residential Project would occur.

[16] HortScience | Bartlett Consulting. 2019. Arborist Report. February.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

MM BIO-5a Obtain Tree Removal Permits Prior to Construction

Civic Project and Residential Project: Any plan affecting trees should be reviewed by the Consulting Arborist with regard to tree impacts. These include, but are not limited to, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans and demolition plans.

MM BIO-5b Implement Tree Protection Treatments Prior to Construction

Civic Project and Residential Project:

- The Demolition Contractor shall meet with the Consulting Arborist before beginning work to discuss work procedures and tree protection. Of specific concern is removal of existing chain-link fence in along the northeast and east property lines.
- Cap and abandon all existing underground utilities within the Tree Protection Zone in place. Removal of utility boxes by hand is acceptable but no trenching should be performed within the Tree Protection Zone in an effort to remove utilities, irrigation lines, etc.
- Fence trees to completely enclose the Tree Protection Zone prior to demolition, grubbing, or grading. Fences shall be 6-foot chain link or equivalent as approved by the City of Pleasant Hill. Fences are to remain until all construction is completed.
- Trees to be preserved may require pruning to provide construction clearance. Pruning of off-site trees should be performed with the property owner's permission. All pruning shall be completed by a Certified Arborist or Tree Worker. Pruning shall adhere to the latest edition of the ANSI Z133 and A300 standards as well as the *Best Management Practices—Tree Pruning* published by the International Society of Arboriculture.
- Structures and underground features to be removed within the Tree Protection Zone shall use the smallest equipment, and operate from outside the Tree Protection Zone. The consultant shall be on-site during all operations within the Tree Protection Zone to monitor demolition activity.

MM BIO-5c Implement Tree Protection Guidelines During Construction

Civic Project and Residential Project:

- Prior to beginning work, the contractors working in the vicinity of trees to be preserved are required to meet with the Consulting Arborist at the site to review all work procedures, access routes, storage areas and tree protection measures.

- Fences have been erected to protect trees to be preserved. Fences define a specific Tree Protection Zone for each tree or group of trees. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the Consulting Arborist.
- Any excavation within the dripline or other work that is expected to encounter tree roots should be approved and monitored by the Consulting Arborist. Roots shall be cut by manually digging a trench and cutting exposed roots with a sharp saw. The Consulting Arborist will identify where root pruning is required.
- If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
- Prior to grading, pad preparation, excavation for foundations/footings/walls, trenching, trees may require root pruning outside the Tree Protection Zone by cutting all roots cleanly to the depth of the excavation. Roots shall be cut by manually digging a trench and cutting exposed roots with a sharp saw or other approved root pruning equipment. The Consulting Arborist will identify where root pruning is required.
- All underground utilities, drain lines, or irrigation lines shall be routed outside the Tree Protection Zone. If lines must traverse through the protection area, they shall be tunneled or bored under the tree as directed by the Consulting Arborist.
- No materials, equipment, spoil, waste, or washout water may be deposited, stored, or parked within the Tree Protection Zone (fenced area).
- Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.

MM BIO-5d Monitor Tree Health Post Construction

Civic Project and Residential Project: The health and structural stability of tree should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority. As trees age, the likelihood of branches or entire trees failing will increase. Therefore, annual inspection of trees for structural stability, and signs of insects or disease is recommended to determine any potential future maintenance needs.

Level of Significance After Mitigation

Less than Significant with Mitigation (Civic Project and Residential Project)

Habitat/Natural Community Conservation Plan Consistency

Impact BIO-6:	**The proposed plan would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.**

Construction

Civic Project and Residential Project

The plan area does not fall within the coverage area of a habitat conservation plan or natural community conservation plan. The plan area sits approximately 6 miles west from the nearest habitat conservation plan area; therefore, there would be no construction impact related to consistency with a conservation plan.

Operation

Civic Project and Residential Project

No respective operational impacts would occur because the plan area does not fall within the coverage area of a habitat conservation plan or natural community conservation plan.

Level of Significance

No Impact (Civic Project and Residential Project)

3.3.5 - Cumulative Impacts

Civic Project and Residential Project

Special-status Wildlife and Plant Species

The geographic scope of the cumulative biological resources analysis is the southern portion of the City of Pleasant Hill, specifically the area surrounding Oak Park Boulevard, most of which is a highly developed urban area that has limited potential to support special-status wildlife and plant species. There are waterways that provide habitat for riparian species of flora and fauna, the closest of which is Grayson Creek. In addition, there are various open space areas throughout the City of Pleasant Hill that display grassland and shrubland/chaparral habitat. Riparian habitat and the open space grasslands are small in size and generally isolated areas surrounded by urban development.

Development listed in Table 3-1 (Refer to Chapter 3, Environmental Impact Analysis) consists predominantly of commercial development and some include residential components. All developments are within 1 mile of the plan area and contain similar, disturbed habitat common in urban areas. Due to the presence of habitat within this area of the City, specifically for the western pond turtle, Townsend's big-eared bat and the pallid bat, these species have the potential, albeit low, to occur within the cumulative projects area. Additionally, nesting birds protected by the MBTA have the potential to occur within the plan area surroundings. As noted above, a focused habitat assessment was conducted for the CRLF, which found no suitable habitat within the plan area (Appendix D). Standard pre-construction surveys and, if necessary, avoidance procedures would be required for cumulative projects with the potential to impact nesting birds and protected bat species. While there are isolated pockets of natural habitat that can support special-status wildlife and plant

species, the urban, built-up nature of the Pleasant Hill area precludes the possible significant cumulative impacts to biological resources related to special-status wildlife and plant species.

Sensitive Natural Communities and Wetlands

The City of Pleasant Hill contains several protected aquatic features and smaller riparian areas that would be considered wetlands and/or sensitive natural communities. These features are small in size and often isolated from each other by large, urban developments. To address possible cumulative impacts to sensitive natural communities and wetlands, the Pleasant Hill Municipal Code was been created to address these issues and to avoid impacts. The majority of current developments are designed to address future growth problems, prevent urban sprawl, and minimize developmental impacts to sensitive natural communities. This is accomplished by designing projects to occur in previously developed or highly disturbed areas that the characteristics of lack sensitive natural communities or riparian habitat. Development listed in Table 3-1 consists predominantly of commercial development and some include residential components. All developments are within 1 mile of the plan area and contain similar, disturbed habitat common in urban areas. As such, the proposed plan, in conjunction with other cumulative projects, would result in a less than significant cumulative impact related to sensitive natural communities and associated riparian habitat. The City of Pleasant Hill would review each of the projects listed in Table 3-1 for biological impacts to sensitive natural communities or riparian habitat.

Fish and Wildlife Movement Corridors

The City of Pleasant Hill contains a variety of creeks that act as potential movement corridors for fish and wildlife, such as Grayson Creek. Any future cumulative development that occurs within the City would have to take into account the potential impact to these corridors. As previously mentioned, development listed in Table 3-1 consists predominantly of commercial development and some include residential components. All developments are within one mile of the plan area and contain similar, disturbed habitat common in urban areas. The areas surrounding the potential corridors within the City of Pleasant Hill are highly developed, further impeding the movement of species out from these areas. Additionally, the current development plans will adhere to the City's creek setback requirement to reduce any potential cumulative impacts to fish and wildlife movement corridors to a less then significant level.

Protected Trees

Development may require the removal or encroachment on certain protected trees as listed by the City of Pleasant Hill ordinances. As previously mentioned, development listed in Table 3-1 consists predominantly of commercial development and some include residential components. All developments are within 1 mile of the plan area and contain similar, disturbed habitat common in urban areas. Future projects that occur in or near undeveloped areas may require an arborist report to determine the identity of trees planed for removal or encroachment. Therefore, the proposed plan, in conjunction with other future development projects, would be required to adhere to applicable tree ordinances and regulations set by the City resulting in a less than significant cumulative impact to biological resources related to protected trees.

Level of Cumulative Significance

Less Than Significant (Civic Project and Residential Project)

3.4 - Cultural and Tribal Cultural Resources

3.4.1 - Introduction

This section describes existing cultural and tribal cultural resources in the region and Specific Plan area (plan area) as well as the relevant regulatory framework. This section also evaluates the possible impacts related to cultural and tribal resources that could result from implementation of the Specific Plan (proposed plan). Information included in this section is based on the Historic Resources Evaluation Report, cultural resources records search at the Northwest Information Center (NWIC) at Sonoma State University, additional archival and online research, a pedestrian field survey of the plan area with photo-documentation conducted in January 2019, as well as a Sacred Lands File Search from the Native American Heritage Commission (NAHC) and outreach to tribal representatives identified by the NAHC as potentially having interest in the proposed plan or additional information on tribal cultural resources in the vicinity of the plan area. All reports and correspondence are available in Appendix E.

The following comments were received during the Environmental Impact Report (EIR) scoping period related to cultural and tribal cultural resources:

- Request for evaluation of proposed plan in terms of effects related to historic resources (the analysis of historic resources impacts is included in this section).
- Request for evaluation of the proposed plan's compliance with Assembly Bill 52 (AB 52) and Senate Bill 18 (SB 18) tribal consultation requirements.
- Request for evaluation of the proposed plan with respect to the National Environmental Policy Act (NEPA). The plan area is not on federal land and is not subject to NEPA.

3.4.2 - Environmental Setting

Cultural Resources Components

The term "cultural resources" encompasses historic, archaeological and Tribal Cultural Resources as well as burial sites. Below is a brief summary of each component:

- **Historic Resources:** Historic resources are associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the State's history and are generally less than 200 years old.
- **Archaeological Resources:** Archaeology is the study of artifacts and material culture with the aim of understanding human activities and cultures in the past. Archaeological resources may be associated with prehistoric indigenous cultures as well as historic periods.
- **Tribal Cultural Resources:** Tribal cultural resources include sites, features, places, or objects that are of cultural value to one or more California Native American Tribes.
- **Burial Sites and Cemeteries:** Burial sites and cemeteries are formal or informal locations where human remains have been interred.

Overall Cultural Setting

Following is a brief overview of the prehistory, ethnography, and historic background, providing a context in which to understand the background and relevance of sites found in the general plan area. This section is not intended to be a comprehensive review of the current resources available; rather, it serves as a general overview. Further details can be found in ethnographic studies, mission records, and major published sources.[1,2,3,4,5,6]

Prehistoric and Ethnographic Background

In general, archaeological research in the greater San Francisco Bay Area has focused on coastal areas, where large shellmounds were relatively easily identified on the landscape. This research and its chronological framework, however, is relevant to and has a bearing on our understanding of prehistory in areas adjacent to the San Francisco Bay Area, including modern Contra Costa County.

The San Francisco Bay Area supported a dense population of hunter-gatherers over thousands of years, leaving a rich a varied archaeological record. The Bay Area was a place of incredible language diversity, with seven languages spoken at the time of Spanish settlement in 1776. The diverse ecosystem of the bay and surrounding lands supported an average of three to five persons per square mile, but reached 11 persons per square mile in the North Bay. At the time of Spanish contact, the people of the Bay Area were organized into local tribelets that defended fixed territories under independent leaders. Typically, individual Bay Area tribelets included 200 to 400 people distributed among three to five semi-permanent villages, within territories measuring approximately 10 to 12 miles in diameter.[7]

Native American occupation and use of the greater Bay Area, including the regions comprising modern Walnut Creek and Pleasant Hill, extends over 5,000 to 7,000 years and may be longer. Early archaeological investigations in Central California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area. The initial archaeological reports typically contained descriptive narratives with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on a variation of intersite assemblages. Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence. In 1939, researcher Jeremiah Lillard of Sacramento Junior College noted that each cultural period led directly to the next and that influences spread from the Delta region to their regions in Central California. [8] In the late 1940s and early 1950s, researcher Richard Beardsley of the University of California Berkeley documented similarities in

1 Kroeber, A.L. 1925. Handbook of the Indians of California. Bulletin 78. Bureau of American Ethnology. Washington, D.C.: Smithsonian Institution.
2 Beardsley, R.K. 1948. "Cultural Sequences in Central California Archaeology." American Antiquity 14:1-28.
3 Bennyhoff, J. 1950. Californian Fish Spears and Harpoons. Berkeley: University of California Anthropological Records 9(4):295-338.
4 Chartkoff J.L. and K.K. Chartkoff. 1984. The Archaeology of California. Menlo Park: Stanford University Press.
5 Moratto, M.J. 1984. California Archaeology. San Diego: Academic Press.
6 Jones, T.L. and Kathryn A. Klar. 2007. California Prehistory. Lanham: AltaMira Press; Rowman & Littlefield Publishers, Inc.
7 Milliken, Randall et.al. 2007. Punctuated Culture Change in the San Francisco Bay Area, In Prehistoric California: Colonization, Culture, and Complexity, edited by T.L. Jones and K.A. Klar, 99–124. AltaMira Press.
8 Lillard, J.B. and W.K. Purves. 1936. The Archaeology of the Deer Creek-Cosumnes Area, Sacramento Co., California. Sacramento. Sacramento Junior College, Department of Anthropology Bulletin 1.

artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became known as the Central California Taxonomic System (CCTS). This system proposed a uniform, linear sequence of cultural succession.[9]

To address some of the flaws in the CCTS system, D.A. Fredrickson introduced a revision that incorporated a system of spatial and cultural integrative units. Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian (10000 to 6000 before Christ [BC]); Lower, Middle and Upper Archaic (6000 BC to *anno domini* [AD] 500), and Emergent (Upper and Lower, AD 500 to 1800). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence.[10] In addition, Fredrickson defined several patterns—a general way of life shared within a specific geographical region. These patterns include:

- Windmiller Pattern or Early Horizon (3000 to 1000 before Common Era [BCE])
- Berkeley Pattern or Middle Horizon (1000 BCE to 500 Common Era [CE])
- Augustine Pattern or Late Horizon (500 CE to historic period)

Brief descriptions of these temporal ranges and their unique characteristics follow.

Windmiller Pattern or Early Horizon (3000 to 1000 BCE)

Characterized by the Windmiller Pattern, the Early Horizon was centered in the Cosumnes district of the Delta and emphasized hunting rather than gathering, as evidenced by the abundance of projectile points in relation to plant processing tools. Additionally, atlatl, dart, and spear technologies typically included stemmed projectile points of slate and chert but minimal obsidian. The large variety of projectile point types and faunal remains suggests exploitation of numerous types of terrestrial and aquatic species.[11] Burials occurred in cemeteries and intra-village graves. These burials typically were ventrally extended, although some dorsal extensions are known with a westerly orientation and a high number of grave goods. Trade networks focused on acquisition of ornamental and ceremonial objects in finished form rather than on raw material. The presence of artifacts made of exotic materials such as quartz, obsidian, and shell indicates an extensive trade network that may represent the arrival of Utian populations into central California. Also indicative of this period are rectangular Haliotis and Olivella shell beads, and charmstones that usually were perforated.[12]

Berkeley Pattern or Middle Horizon (1000 BCE to 500 CE)

The Middle Horizon is characterized by the Berkeley Pattern, which displays considerable changes from the Early Horizon. This period exhibited a strong milling technology represented by minimally shaped cobble mortars and pestles, although metates and manos were still used. Dart and atlatl technologies during this period were characterized by non-stemmed projectile points made primarily of obsidian. Fredrickson suggests that the Berkeley Pattern marked the eastward expansion of

[9] Beardsley, R.K. 1948. Cultural Sequences in Central California Archaeology. American Antiquity 14:1–28.
[10] Fredrickson, D.A. 1973. Early Cultures of the North Coast of the North Coast Ranges, California. PhD dissertation.
[11] Bennyhoff, J. 1950. Californian Fish Spears and Harpoons. University of California Anthropological Records 9(4):295–338.
[12] Ragir, S.R. 1972. The Early Horizon in Central California Prehistory. Contributions of the University of California Archaeological Research Facility 15. Berkeley, CA.

Miwok groups from the San Francisco Bay Area. Compared with the Early Horizon, there is a higher proportion of grinding implements at this time, implying an emphasis on plant resources rather than on hunting. Typical burials occurred within the village with flexed positions, variable cardinal orientation, and some cremations. As noted by Lillard, Heizer, and Fenenga, the practice of spreading ground ochre over the burial was common at this time. Grave goods during this period are generally sparse and typically include only utilitarian items and a few ornamental objects. However, objects such as charmstones, quartz crystals, and bone whistles occasionally were present, which suggest the religious or ceremonial significance of the individual.[13] During this period, larger populations are suggested by the number and depth of sites compared with the Windmiller Pattern. According to Fredrickson, the Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.[14]

Augustine Pattern or Late Horizon (500 CE to Historic Period)

The Late Horizon is characterized by the Augustine Pattern, which represents a shift in the general subsistence pattern. Changes include the introduction of bow and arrow technology; and most importantly, acorns became the predominant food resource. Trade systems expanded to include raw resources as well as finished products. There are more baked clay artifacts and extensive use of Haliotis ornaments of many elaborate shapes and forms. According to Moratto, burial patterns retained the use of flexed burials with variable orientation, but there was a reduction in the use of ochre and widespread evidence of cremation.[15] Judging from the number and types of grave goods associated with the two types of burials, cremation seems to have been reserved for individuals of higher status, whereas other individuals were buried in flexed positions. Johnson suggests that the Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.[16]

Central California research has expanded from an emphasis on defining chronological and cultural units to a more comprehensive look at settlement and subsistence systems. This shift is illustrated by the early use of burials to identify mortuary assemblages and more recent research using osteological data to determine the health of prehistoric populations. Although debate continues over a single model or sequence for California, the general framework consisting of three temporal/cultural units is generally accepted, although the identification of regional and local variation is a major goal of current archaeological research.

The Bay Miwok

The San Francisco Bay Area consisted of several independent tribal territories during the prehistoric and early historic periods. Native Peoples largely spoke dialects of five distinct languages: Costanoan (Ohlone), Bay Miwok, Plains Miwok, Patwin, and Wappo. The plan area lies at intersection of several of these groups at different periods in time, however it was largely within the ethnographic and historic boundaries of Bay Miwok speakers, who occupied the eastern portions of Contra Costa County, from

[13] Lillard, J.B., R.F. Heizer, and F. Fenenga. 1939. An Introduction to the Archaeology of Central California. Sacramento Junior College, Department of Anthropology, Bulletin 2.
[14] Fredrickson, D.A. 1973. Early Cultures of the North Coast of the North Coast Ranges, California. PhD dissertation.
[15] Moratto, M.J. 1984. California Archaeology. San Diego: Academic Press.
[16] Johnson, J.J. 1976. Archaeological Investigations at the Blodgett Site (CA-SAC-267), Sloughhouse Locality, California. Report to the U.S. National Parks Service, Western Regional Office, Tucson, Arizona.

Walnut Creek east to the Sacramento-San Joaquin Delta, including the northern slopes of Mount Diablo. Several bands of Miwok are associated with the area, the closest being the Saclan, whose territory extended through the hills east of present-day Rossmoor, Lafayette, Moraga and Walnut Creek.

The foremost political unit of the Miwok was the tribelet; an independent and sovereign nation with defined boundaries and control over the natural resources within those boundaries. As noted by Levy, villages are described as headquarters of a localized patrilineage, and this social organization was further prescribed by individual lineage memberships in a moiety. With the notable exceptions of tobacco and dogs, the Eastern Miwok largely lacked cultivated plants or domesticated animals.[17]

All plant foods were naturally occurring and gathered by hand, the most important of which were the seven varieties of acorn used by the Eastern Miwok people. Acorns were usually allowed to ripen and fall off the tree on their own where they would then be collected in large numbers in burden baskets. The acorns were then shelled, placed on an acorn anvil, and struck with a hammer stone to expose the meats within. These meats were ground into a fine meal using a bedrock mortar and cobblestone pestle. The meal was then sifted into a tightly coiled basket, and several applications of water were run through the basket to leach the bitter tannin from the meal. Once dry, the meal could be used in the preparation of acorn soup, mush, biscuits, and bread. For this reason, access to acorns, clean, moving water, and exposed bedrock was particularly important to the Eastern Miwok. These resources were available in the general plan area.

The plan area includes Grayson Creek, formerly known as Pacheco Creek Springs. Watercourses were often a focus of prehistoric occupation in central California with Native American groups exploiting a variety of ecological niches. While this area was within an environmentally advantageous area for Native Americans located between the resources of the San Francisco Bay margin and the foothills and nearby creeks, no known ethnographic settlements are known to have been located within or adjacent to the plan area. Prehistoric site types recorded in the general Pleasant Hill area consist of lithic scatters, quarries, habitation sites (including burials), bedrock mortars or other milling feature sites, petroglyph sites, and isolated burial sites. However, none of these resources or the habitation mounds mapped by Whitney in 1873 or recorded by Nels C. Nelson in 1912 are located on or near the plan area.

Regional Historic Background

Spanish Period

The Eastern Miwok were first contacted by the Spanish exploring expeditions of the Sacramento-San Joaquin Valley in the second part of the eighteenth century. The first Spanish expeditions through the study area were led by Captain Pedro Fages and Father Juan Crespi in 1772. Juan Bautista de Anza also led an expedition in 1776. Expedition campsites have been mapped in the vicinity of Interstate 680, State Route 242, and Willow Pass Road. According to Hart, Spanish colonial policy from 1769-1821 was directed at the founding of presidios, missions, and secular towns, with the land held by the Crown. The depletion of the coastal populations resulted in Spanish missionaries shifting to conversion of the interior peoples. The Bay Miwok were the first of the Eastern Miwok to

[17] Levy, R. 1978. Costanoan. In California, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, Vol. 8. W.G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

be missionized, and were generally not willing converts. Mission baptismal records show that Native Americans went to Mission San Francisco de Assisi, founded in 1776, and Mission San Jose, founded in 1797. Their traditional lifeways apparently disappeared by 1810 due to disruption by Euro American diseases, a declining birth rate, and the impact of the mission system. For the most part, the former hunters-gatherers were transformed into agricultural laborers and worked with former neighboring groups such as the Esselen, Yokuts, and Miwok. After secularization of the missions between 1834 and 1836, some Native Americans returned to traditional religious and subsistence practices while others labored on Mexican ranchos. Thus, multi-ethnic Indian communities grew up in and around the area and provided informant testimony to ethnologists from 1878 to 1933.[18]

Mexican Period

The Mexican Period, 1821 to 1848, was marked by secularization and division of mission lands among the *Californios* as land grants, termed ranchos. During this period, Mariano G. Vallejo assumed authority of Sonoma Mission and established a rapport with the Native Americans who were living there. In particular, Vallejo worked closely with Chief Solano, a Patwin who served as Vallejo's spokesperson when problems with Native American tribes arose. The large rancho lands often were worked by Native Americans who were used as forced labor.

Shoup and Milliken state that mission secularization removed the social protection and support on which Native Americans had come to rely. It exposed them to further exploitation by outside interests, often forcing them into a marginal existence as laborers for large ranchos.[19] Following mission secularization, the Mexican population grew as the Native American population continued to decline. Euro-American settlers began to arrive in California during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants. In 1846, on the eve of the Mexican-American War (1846 to 1848), the estimated population of California was 8,000 non-natives and 10,000 Native Americans. However, these estimates have been debated. Cook suggests the Native American population was 100,000 in 1850; the U.S. Census of 1880 reports the Native American population as 20,385.[20]

Gold Rush and American Expansion Period

In 1848, James W. Marshall discovered gold at Coloma in modern-day El Dorado County, which started the gold rush into the region that forever altered the course of California's history. The arrival of thousands of gold seekers in the territory contributed to the exploration and settlement of the entire State. By late 1848, approximately four out of five men in California were gold miners. The gold rush originated along the reaches of the American River and other tributaries to the Sacramento River, and Hangtown, present-day Placerville, became the closest town offering mining supplies and other necessities for the miners in El Dorado County. Gold subsequently was found in the tributaries to the San Joaquin River, which flowed north to join the Sacramento River in the great delta east of San Francisco Bay.[21]

[18] Hart, J.D. 1987. A Companion to California (New edition, revised and expanded). University of California Press, Berkeley, California.
[19] Shoup, L.H., and R.T. Milliken. 1999. Inigo of Rancho Posolmi: the Life and Times of a Mission Indian. Novato, CA. Ballena Press.
[20] Cook, S.F. 1976. The Population of the California Indians 1769–1970. University of California Press. Berkeley, California.
[21] Robinson, W.W. 1948. Land in California. Berkeley, CA: University of California Press. Cook, S.F. 1976. The Population of the California Indians 1769–1970. University of California Press. Berkeley, California.

By 1864, California's gold rush had essentially ended. The rich surface and river placers were largely exhausted and the miners either returned to their homelands or stayed to start new lives in California. After the gold rush, people in towns such as Jackson, Placerville, and Sonora turned to other means of commerce, such as ranching, agriculture, and timber production. With the decline of gold mining, agriculture and ranching came to the forefront in the State's economy. California's natural resources and moderate climate proved well suited for cultivation of a variety of fruits, nuts, vegetables, and grains.[22]

History of Contra Costa County and City of Pleasant Hill

The east side of San Francisco Bay, directly across from the City of San Francisco, became known as the "opposite coast" (or contra costa) by the Spanish. The county was formed in December of 1849 and is one of the original 27 California counties, with the county seat at Martinez.[23] In 1853, a portion of western and southern Contra Costa County became part of a newly formed Alameda County. Contra Costa County, like much of California, was seen as a land of economic opportunity, not just for its mining resources but also for its productive land where farmers could cultivate a variety of crops. Agriculture became important in the California economy in the late 1850s, and through to the 1860s, homesteading became a means by which people could own and operate a family farm. The decidedly agricultural focus also underpins the historical significance of the Spanish colonial and Mexican era of land grants. As early as 1882, special interests advertised the County's virtues as a place to cultivate. Early settlers began to speak of beneficial soils that support a range of crops—pears, prunes, peaches, almonds, walnuts and grapes flourished—with seasonal rainfall, and favorable climates. In addition, Contra Costa County is strategically located at crossing of trade routes with a waterfront location and relative closeness to the San Francisco metropolis. Large-scale commercial operations began to capitalize on mechanical innovations just as irrigation developed in the early 1880s. Consequently, competing economic interests caused land prices to increase and make family farming a less profitable enterprise.

At the end of World War II, the community of Pleasant Hill evolved from an agricultural based community to a suburban residential community with much of the land previously used for agriculture turned into large housing tracts.[24] Starting in the 1950s, some of the residents of the community began to push for the incorporation of Pleasant Hill as a City, and transition from County governance. A series of local resolutions were put forth for the community to vote for, or against, incorporating the community of Pleasant Hill. After a few failures, the community voted to incorporate in November 1961. Pleasant Hill became the twelfth city of Contra Costa County, and the 375th city in the State of California.[25]

Throughout the 1960s and 1970s, large companies followed their employees to suburban areas east of San Francisco. The establishment of large population centers fostered the development of equally large shopping centers. To meet demand on infrastructure, the State modernized highways and roadways, and with the establishment of the Bay Area Rapid Transit system (adjacent to the plan

[22] Beck, Warren A., and Y.D. Haase. 1974. Historical Atlas of California (Third Printing 1977). University of Oklahoma Press, Norman, Oklahoma.
[23] Hoover, Mildred B., et.al. Historic Spots in California. 5th ed., revised by Douglas E. Kyle. Stanford University Press, Stanford: 2002.
[24] Emanuels, George. California's Contra Costa County: An Illustrated History. Walnut Creek, CA: Diablo Books; 1986.
[25] Whitfield, Vallie Jo. History of Pleasant Hill, California. Pleasant Hill, CA: Whitfield Books; 1981.

area), cities like Pleasant Hill continued to grow at an exponential rate. Today, the city continues to expand with a renovated downtown area that opened in 2000, and planned developments intended to provide housing and services for the ever-growing Bay Area tech economy.

Records Searches and Pedestrian Survey to Identify Existing Cultural Resources

Northwest Information Center Records Search

On April 13, 2018, a records search for the plan area and a 0.5-mile radius beyond the plan area boundaries was conducted at the NWIC located at Sonoma State University in Rohnert Park, California. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historical Landmarks list, the California Points of Historical Interest list, and the California State Historic Resources Inventory for Sonoma County were reviewed to determine the existence of previously documented local historical resources.

The results of the records search indicated that three known cultural resources have been recorded within the 0.5-mile search radius surrounding the plan area, none of which are located within the plan area (Table 3.4-1). In addition, 20 area-specific survey reports are on file with the NWIC for the search radius (Table 3.4-2). None of the previous surveys assessed the plan area, suggesting the plan area has not been previously surveyed for cultural resources.

Table 3.4-1: Recorded Cultural Resources within a 0.5-mile Radius of the Plan Area Boundaries

Resource No.	Resource Description	Date Recorded
P-07-002695	**Contra Costa Canal: Historic Structure** HP20 (Canal/aqueduct)	1993
P-07-002944	**1791 Sunnyvale Avenue, John P. Wright Residence: Historic Building** AH15 (House)	2005
P-07-002945	**1779 Sunnyvale Avenue, Joseph Souza Residence: Historic Building** AH15 (House)	2005
Source: NWIC Records Search. April 4, 2018.		

Table 3.4-2: Previous Investigations within a 0.5-mile Radius of the Plan Area Boundaries

Report Number	Report Title/Project Focus	Author	Date
S-000402	Archaeological Impact Evaluation of a portion of East Grayson Creek, Pleasant Hill, California (letter report)	William Roop	1976
S-000623	Archaeological and Historic Architectural Survey of 04-CC-680 15.4/17.4, 0.2 mile north of North Main St. to 0.1 mile north of Oak Park Blvd., BART Interface and I/C Revision, 04205-377111 (letter report)	Richard B. Hastings	1975

Table 3.4-2 (cont.): Previous Investigations within a 0.5-mile Radius of the Plan Area Boundaries

Report Number	Report Title/Project Focus	Author	Date
S-001229	An Archaeological Reconnaissance of the Geary Road widening project area in Walnut Creek (letter report)	David Chavez	1978
S-005215	An Archaeological Survey of the Hookston Square Office Park, Buskirk Avenue and Hookston Road, Contra Costa County, California	Leslie Jang	1982
S-007080	Archaeological Survey Report for Reconstruction of I-680/24 Interchange and Freeway Improvements, Contra Costa County, 04-CC-680 12.6/19.0; Additional Area Surveyed: 04-CC-680 19.0/23.0 and 04-CC-24 0.0/2.3 04224-400310	Pat Oman	1984
S-015478	Preliminary Archaeological Survey of the CC Line and A-Line Sewer Project, Contra Costa County, California	John F. Salter	1990
S-016201	Cultural Resources Field Inventory, Maggie Lane—8-Lot Subdivision, 1648 Geary Road, City of Walnut Creek, APN No. 170-270-067 (letter report)	Colin I. Busby	1994
S-016396	Cultural Resources Field Inventory, Three Oaks Housing Limited Partnership, 3073 North Main Street, APN No. 170-100-029 (letter report)	Colin I. Busby	1994
S-017213	Archaeological Survey Report, proposed disposal of three excess parcels off of Astrid Drive and Warner Lane, 04-CC-680 Post-Kilo 27.8 04402-377192	Todd D. Jaffke	1995
S-017700	Cultural Resources Initial Study, Six Parcels fronting on Oak Park Boulevard between vicinity of Manor and Hook Avenues, City of Pleasant Hill, Contra Costa County, California (letter report)	Colin I. Busby	1995
S-018292	Cultural Resources Field Inventory, 1658 Geary Road, City of Walnut Creek, APN No. 170-270-038, Addendum to Report for Maggie Lane—8-Lot Subdivision, 1648 Geary Road, City of Walnut Creek, APN No. 170-270-067	Colin I. Busby	1995
S-018293	Cultural Resources Field Inventory, 1760 Geary Road, City of Walnut Creek, APN No. 170-250-007, Subdivision 7994, Maggie Lane Phase II (letter report)	Colin I. Busby	1995
S-018440	Class II Archaeological Survey of the Contra Costa Canal, Contra Costa County, California	G. James West and Patrick Welch	1996
S-035541	Cultural Resources Study for the Real Estate Engineering, Inc. Development Project, Walnut Creek, Contra Costa County, California	John Kelley	2005
S-035543	Supplemental Cultural Resources Study for the Real Estate Engineering, Inc. Development Project, Walnut Creek, Contra Costa County, California	John Kelley	2006

Table 3.4-2 (cont.): Previous Investigations within a 0.5-mile Radius of the Plan Area Boundaries

Report Number	Report Title/Project Focus	Author	Date
S-047525	Cultural Resources Constraints Report, Geary 0401 Cutover, Concord (Circuit: Geary 0401 and Pleasant Hill 0401), Contra Costa County, PM Number 31037250	Robin Fies	2015
S-047525a	Archaeological Monitoring Summary Report for 31037250 Geary 0401 Cutover, Concord (Circuit: Geary 0401 and Pleasant Hill 0401), Contra Costa County (letter report)	Robin Fies	2015
S-047775	Historic Property Survey Report for the CCTA Interstate 680 Express Lanes Project, Contra Costa County, California; 04-CCO-680 PM R8.0-25.0, EA 04H610 (EFIS ID No. 0413000216)	Adrian Whitaker	2016
S-047775a	Archaeological Survey Report for the CCTA Interstate 680 Express Lanes Project, Contra Costa County, California 04-CCO-680 PM R8.0-25.0, EA 04H610 (EFIS ID No. 0413000216)	Adrian Whitaker and Philip Kaijankoski	2016
S-047775b	Extended Phase I Report for the CCTA Interstate 680 Express Lanes Project, Contra Costa County, California 04-CCO-680 PM R8.0-25.0, EA 04H610 (EFIS ID No. 0413000216)	Philip Kaijankoski, Jack Meyer, Naomi Scher, and Adrian Whitaker	2016
Source: NWIC Records Search. April 4, 2018			

Native American Heritage Commission Records Search and Tribal Correspondence

On May 10, 2018, FCS sent a letter to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the plan area. A response was received on May 15, 2018, indicating that the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate plan area. The NAHC included a list of six tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential Tribal Cultural Resources that may be affected by implementation of the proposed plan are addressed, a letter containing information on the proposed plan and requesting any additional information was sent to each tribal representative on December 19, 2018. No responses have been received to date.

Additionally, the City of Pleasant Hill provided formal notification to applicable Native American Governments on pursuant to California AB 52 and SB 18 on November 20, 2018. No requests for consultation were received within the specified timeframe; however, a subsequent request for information was received from Wilton Rancheria, who had previously not requested consultation pursuant to AB 52. The City provided formal notification of the proposed plan and general plan amendment to Wilton Rancheria on February 1, 2019. Wilton Rancheria replied by e-mail on February 24, 2019, stating that, with regards to the Pleasant Hill 2003 General Plan Amendment and SB 18, the Tribes only concern was that in the event of the discovery of Native American Artifacts or Human remains, procedures outlined in the Archaeological Resources Protection Act (ARPA) (16 United States

Code [USC] 469), Native American Graves Protection and Repatriation Act (NAGPRA) [25 USC 3001-30013], Health and Safety Code Section 7050.5, and Public Resources Code Section 5097.9 et al., be followed. Wilton Rancheria sent a second e-mail on February 26, 2019, requesting additional information about proposed plan specifics pursuant to AB 52. A copy of all records search results and draft mitigation measures were sent to Wilton Rancheria for review and comment on February 27, 2019. No additional comments or requests for consultation have been received to date.

Cultural Resources Pedestrian Survey

FCS Senior Archaeologist Dr. Dana DePietro, RPA, surveyed the plan area on November 20, 2018, and on January 30, 2019. The plan area is located within the United States Geological Survey (USGS) Walnut Creek 7.5-minute Quadrangle Map Township 1 North, Range 2 South, Section 15, Latitude 37°55'22"N Longitude 122°01'53"W. The plan area is roughly located at the intersection of Oak Park Boulevard and Monticello Avenue, in an urban area of Pleasant Hill, Contra Costa County. The plan area consists of two parcels (Assessor's Parcel Number [APN] 149-271-014 and APN 149-230-005) and portions of Monticello Avenue, Oak Park Boulevard, and the Grayson Creek Corridor. The plan area was surveyed using standard 15-meter transects moving east-west across plan area whenever possible.

Civic Project

The survey in this area began in the southwest corner of the lot and moved north, using east-west transects spaced at 15-meter intervals whenever possible. Visible soils consisted of compact, medium brown loam interspersed with small water-worn stones (5 to 10 centimeters) composed of schist, basalt, and quartz. Overall soil visibility was moderate, ranging from 40 to 60 percent across the area. Soils in sections of poor visibility were intermittently inspected using a hand trowel. No historic or prehistoric cultural resources or raw materials commonly used in the manufacture of tools (e.g., obsidian, Franciscan chert, shell, etc.) were found in these areas.

The Civic Project includes portions of Oak Park Boulevard and Monticello Avenue, both of which are hardscaped, including pavement and sidewalks. As such, no native soils or potential resources were observed during the survey in this area.

Visible soils in the Grayson Creek Corridor area consisted of medium dark brown alluvial soils interspersed with medium water-worn stones (10 to 15 centimeter) composed of schist, basalt and quartz. Overall soil visibility was poor, ranging from 10 to 30 percent across the area. Soils in sections of poor visibility were intermittently inspected using a hand trowel. Soils in immediately adjacent to Grayson Creek were noticeably darker in color; however, upon close inspection at multiple locations, did not contain artifacts or materials consistent with midden soils. Particular attention was paid to the banks of Grayson Creek, as locations adjacent to natural resources are traditionally considered to have higher potential for cultural sensitivity as they were attractive locations for prehistoric human settlement. No historic or prehistoric cultural resources or raw materials commonly used in the manufacture of tools (e.g., obsidian, Franciscan chert, shell, etc.) were found in these areas.

Residential Project

This section of the plan area is entirely hardscaped, and consists of parking lots and pavement surrounding the main library building and associated offices. As such, no native soils were observed

during the survey in this area. The Library Complex itself, however, was determined to be more than 45 years in age and potentially eligible for inclusion on the CRHR. As such, it is considered a potential historic resource under California Environmental Quality Act (CEQA) and required an assessment of the building's historic significance and eligibility. A subsequent site visit and historic evaluation was conducted by Daly and Associates in August 2018.

Architectural and Historic Resources Assessment

Civic Project

The Civic Project site does not contain any buildings or structures and therefore does not have any potentially historic resources.

Residential Project

The existing Pleasant Hill Library located within the Residential Project site is more than 45 years old, and has not been previously evaluated for historic significance. Properties more than 45 years in age are considered potential eligible for listing in the NRHP, CRHR, or local listing and consequently, could be considered historic resources under CEQA. The library was evaluated by Daily and Associates relative to the following CRHR eligibility criteria, which are based on NRHP Standards A-D.[26]

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

CRHR and Local Listing Eligibility Evaluation

In 1958, the community of Pleasant Hill recognized the need to build a larger library to address the needs of its residents, and a project was developed between the City and County to construct a new modern building. What is currently called the "Pleasant Hill Library" and located at 1750 Oak Hill Boulevard was originally known as the Contra Costa County Central Library at Pleasant Hill, and served as the local branch library and as the headquarters of the County's library system. The architectural firm of Corlett and Spackman, which had designed such public buildings as the open-air stadium at the 1960 Winter Olympics in Squaw Valley, was selected to design the new library building. The Pleasant Hill Library was constructed 1960-1961, and opened in 1961. Below, is the evaluation of the building under federal, State, and local criteria for significance as a historical resource.

a) Under Criterion A of the NRHP, and Criterion 1 of the CRHR, the library building does not appear to have been associated with events that made a significant contribution to the broad patterns of history in Pleasant Hill, Contra Costa County, or California. The existing library building was

[26] Daly and Associates, 2018. Historic Resource Evaluation Report for the Pleasant Hill Library Contra Costa Library System.

not the first library in Pleasant Hill, nor has the building been found to be directly responsible for any important themes or trends associated with the history of municipal libraries constructed during the second half of the twentieth-century. The library building does not appear eligible for listing as a historical resource in the NRHP or CRHR. The library's chain of ownership was thoroughly researched at the Contra Costa Records Office, archives at the Contra Costa Historical Society, and a search of the California Digital Newspaper Collection. The relative absence of any of these individuals from published accounts of the History of Pleasant Hill indicates that they did not achieve a level of historic importance for the property to be considered eligible under Criterion 1.

b) Under the criterion for evaluating properties for its direct association with the lives of persons important to the history of Pleasant Hill, Contra Costa County, or the United States, the library building does not appear eligible for listing in the NRHP under Criterion B, or the CRHR under Criterion 2. No evidence was found that individual library staff or County Library administration associated with the library building on a day-to-day basis, were persons identified as having a direct effect to history of the region, State, or nation.

c) Per Criterion C of the NRHP, and Criterion 3 the CRHR, for evaluating the significance of the architecture, design, or construction of built-environment resources, the library building meets the requirements to be determined a significant resource. The library building exhibits the distinctive characteristics of an International style, Mid-Century Modern-era building. The building embodies the International style that is characterized by an emphasis on function, and is devoid of decorative and regional decorative motifs. The style was pioneered by the architect Le Corbusier, and the Bauhaus school, in the 1920s and 1930s.[27] The library building is not only an excellent example of International style Mid-Century Modern architecture, but it is also a rare example of a mid-century building with a major space comprised of a round room with associated framing structure, located in Contra Costa County. While it does not appear that the library building would meet the level of importance on a national level to be determined eligible for listing in the NRHP, based on an investigation of the design, materials, method of construction, and its architects, the library building is determined eligible for listing in the CRHR under Criterion 3.

d) The library building has not yielded, nor does it appear to have the potential to yield, information important to the history of the local area, California or the nation. The property does not appear eligible for listing in the NRHP under Criterion D or the CRHR under Criterion 4.

The library building has also retained the levels of physical integrity as presented in the aspects of the original design, materials, workmanship, location, association, setting, and feeling, which should be present to convey a properties historic significance.

Evaluating the library building under the City of Pleasant Hill's Criteria for Establishment of Historic Districts and Cultural Resources Designations (Pleasant Hill Municipal Code 18.45.070), it has been determined that the building meets Criterion 3, 4, and 6, and therefore could be designated a Cultural Resource in the City of Pleasant Hill. The existing library building is a structure that exemplifies the Mid-Century Modern style of architecture; is one of the best remaining examples of

[27] Le Corbusier, 2007. Toward an Architecture. Translated by John Goodman. Los Angeles: Getty Research Institute.

Mid-Century Modern style architecture in Pleasant Hill, and, the library building embodies elements of Mid-Century Modern style architecture by its creative use of geometric shapes, use of exposed steel beam framing, glass mosaic tile, and Vitrenamel panels framed in the exterior curtain walls.

For purposes of the California Historical Resources Information System (CHRIS), as of August 2018, the library building is assigned California Historical Resource Status Code 3CS as a property that has been found eligible for listing in the CRHR through survey evaluation.

Summary of Existing Cultural Resources in the Plan Area

Historical Architectural Resources

Civic Project

There are no sites, buildings, structures, or objects on the Civic Project site that warrant evaluation or further consideration.

Residential Project

The library building was evaluated for historic significance by Daly and Associates in August 2018. It was assigned California Historical Resource Status Code 3CS as a property that has been found eligible for listing in the CRHR through survey evaluation. As such, it is considered a historic resource under CEQA.

Archaeological Resources

Civic Project and Residential Project

No archaeological resources have been recorded within the Civic Project site or Residential Project site, and none were observed over the course of the pedestrian surveys.

Tribal Cultural Resources

Civic Project and Residential Project

No tribal cultural resources have been recorded within the Civic Project site or Residential Project site, and none have been identified through a search of the NAHC Sacred Lands File and subsequent outreach to Native American representatives conducted pursuant to AB 52.

3.4.3 - Regulatory Framework

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended, established the NRHP, which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 Code of Federal Regulations 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events.
- It is associated with significant people in the past.

- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction.
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

Archaeological Resources Protection Act

The ARPA amended the Antiquities Act of 1906 (16 USC 431–433) and set a broad policy that archaeological resources are important to the nation and should be protected, and required special permits before the excavation or removal of archaeological resources from public or Indian lands. The purpose of the ARPA was to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites that are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) established federal policy to protect and preserve the inherent rights of freedom for Native groups to believe, express, and exercise their traditional religions. These rights include but are not limited to access to sites, use and possession of sacred objects, and freedom to worship through ceremonials and traditional rites.

Native American Graves Protection and Repatriation Act

The NAGPRA of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

State

California Register of Historical Resources

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the criteria for listing on the CRHR. The CRHR and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model, since the NHPA provides the highest standard for evaluating the significance of historic resources. A

resource that meets the NRHP criteria is clearly significant. In addition, a resource that does not meet the NRHP standards may still be considered historically significant at a local or State level.

California Environmental Quality Act

The CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. The CEQA Guidelines direct lead agencies to evaluate archaeological sites to determine if they meet the criteria for listing in the CRHR. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the CRHR, potential adverse impacts to it must be considered. If an archaeological site is considered not to be an historical resource but meets the definition of a "unique archeological resource" as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

CEQA Guidelines Section 15064.5(a)—CEQA Definition of Historical Resources

CEQA Guidelines Section 15064.5(a), in Title 14 of the California Code of Regulations, defines a "historical resource" as:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.

(2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources.

(4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

Therefore, under the CEQA Guidelines, even if a resource is not included on any local, State, or federal register, or identified in a qualifying historical resources survey, a lead agency may still determine that any resource is a historical resource for the purposes of CEQA if there is substantial evidence supporting such a determination. A lead agency must consider a resource to be historically significant if it finds that the resource meets the criteria for listing in the CRHR.

Archaeological and historical sites are protected pursuant to a wide variety of State policies and regulations, as enumerated in the Public Resources Code. Cultural resources are recognized as nonrenewable resources and receive additional protection under the Public Resources Code and CEQA.

CEQA Guidelines Section 15064.5(a)(3)—California Register of Historical Resources Criteria

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the criteria for listing on the CRHR. The CRHR and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model (see criteria described above under the description of the NHPA), since NHPA provides the highest standard for evaluating the significance of historic resources. A resource that meets NRHP criteria is clearly significant. In addition, a resource that does not meet NRHP standards may still be considered historically significant at a local or State level.

CEQA Guidelines—Effects on Archaeological Resources

The CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. The CEQA guidelines direct lead agencies to evaluate archaeological sites to determine if they meet the criteria for listing in the CRHR. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the CRHR, potential adverse impacts to it must be considered. If an archaeological site is considered not to be an historical resource but meets the definition of a "unique archeological resource" as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

CEQA Guidelines Section 15064.5(d)—Effects on Human Remains

Native American human remains and associated burial items may be significant to descendant communities and/or may be scientifically important for their informational value. They may be significant to descendant communities for patrimonial, cultural, lineage, and religious reasons. Human remains may also be important to the scientific community, such as prehistorians, epidemiologists, and physical anthropologists. The specific stake of some descendant groups in ancestral burials is a matter of law for some groups, such as Native Americans (CEQA Guidelines § 15064.5(d); PRC § 5097.98). CEQA and other State regulations regarding Native American human remains provide the following procedural requirements to assist in avoiding potential adverse effects on human remains within the contexts of their value to both descendant communities and the scientific community:

- When an initial study identifies the existence or probable likelihood that a project would affect Native American human remains, the lead agency is to contact and work with the appropriate Native American representatives identified through the NAHC to develop an agreement for the treatment and disposal of the human remains and any associated burial items (CEQA Guidelines § 15064.5(d); PRC § 5097.98).
- If human remains are accidentally discovered, the county coroner must be contacted. If the county coroner determines that the human remains are Native American, the coroner must contact the NAHC within 24 hours. The NAHC must identify the most likely descendant (MLD) to provide for the opportunity to make recommendations for the treatment and disposal of the human remains and associated burial items.

- If the MLD fails to make recommendations within 24 hours of notification or the project applicant rejects the recommendations of the MLD, the Native American human remains and associated burial items must be reburied in a location not subject to future disturbance within the project site (PRC § 5097.98).
- If potentially affected human remains or a burial site may have scientific significance, whether or not it has significance to Native Americans or other descendent communities, then under CEQA, the appropriate mitigation of effect may require the recovery of the scientific information of the remains/burial through identification, evaluation, data recovery, analysis, and interpretation (CEQA Guidelines § 15064.5(c)(2)).

Native American Heritage Commission Sacred Lands Inventory

Section 5097.91 of the Public Resources Code established the whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. This inventory is referred to as the NAHC Sacred Lands File. Under Section 5097.9 of the Public Resources Code, a State policy of noninterference with the free expression or exercise of Native American religion was articulated along with a prohibition of severe or irreparable damage to Native American sanctified cemeteries, places of worship, religious or ceremonial sites or sacred shrines located on public property. Section 5097.98 of the Public Resources Code specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner. Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

California Senate Bill 18—Tribal Consultation

SB 18 (California Government Code, § 65352.3) incorporates the protection of California traditional tribal cultural places into land use planning for cities, counties, and agencies by establishing responsibilities for local governments to contact, refer plans to, and consult with California Native American tribes as part of the adoption or amendment of any general or specific plan proposed on or after March 1, 2005. SB 18 requires public notice to be sent to tribes listed on the Native American Heritage Commission's SB 18 Tribal Consultation list within the geographical areas affected by the proposed changes. Tribes must respond to a local government notice within 90 days (unless a shorter time frame has been agreed upon by the tribe), indicating whether or not they want to consult with the local government. Consultations are for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code that may be affected by the proposed adoption or amendment to a general or specific plan.

California Assembly Bill 52—Effects on Tribal Cultural Resources

AB 52 was signed into law on September 25, 2014, and provides that any public or private "project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." Tribal Cultural Resources include "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources." Under prior law, Tribal Cultural Resources were typically

addressed under the umbrella of "cultural resources," as discussed above. AB 52 formally added the category of "tribal cultural resources" to CEQA, and extends the consultation and confidentiality requirements to all projects, rather than just projects subject to SB 18 as discussed above.

The parties must consult in good faith, and consultation is deemed concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource (if such a significant effect exists); or (2) when a party concludes that mutual agreement cannot be reached. Mitigation measures agreed upon during consultation must be recommended for inclusion in the environmental document. AB 52 also identifies mitigation measures that may be considered to avoid significant impacts if there is no agreement on appropriate mitigation. Recommended measures include:

- Preservation in place
- Protecting the cultural character and integrity of the resource
- Protecting the traditional use of the resource
- Protecting the confidentiality of the resource.
- Permanent conservation easements with culturally appropriate management criteria.

Local

Pleasant Hill 2003 General Plan

The cultural and historic resources chapter of the Pleasant Hill 2003 General Plan contains the following goals and policies related to the protection of cultural resources that are relevant to this analysis:

Community Development Goal 25: Preserve Historic Sites and Structures

- **Goal 25A:** Pursue methods to maintain historic structures and appropriately designate and protect additional historic and cultural resources that may exist in the City.
- **Policy 25.1:** Maintain the historic and cultural resources overlay districts for potential future application.
- **Policy 25.2:** Conduct a survey of the city to identify historic or cultural sites eligible for resource protection, with specific consideration of structures 45 years old and older.
- **Policy 25.4:** Establish a commission that includes experts in local history and archaeology to manage the city's historic resources and/or add cultural resource management responsibility to the charge of the Architectural Review Commission.
- **Policy 25.5:** If cultural resources are unearthed during construction, earth-disturbing work shall be suspended until appropriate mitigation is established by the City in consultation with a qualified archaeologist retained by the developer and/or with the County Coroner.
- **Policy 25.6:** Require archaeological archival study for proposed development projects, plus field study for projects on previously undeveloped properties.

Pleasant Hill Municipal Code Chapter 18.45

a. 18.45.010 Specific Purposes

The specific purposes of the historic districts and cultural resources overlay districts are to prevent neglect of historic or architecturally significant buildings, encourage public appreciation of the city's

past, foster civic and neighborhood pride, enhance property values and increase economic and financial benefits to the city, and encourage public participation in identifying and preserving historical and architectural resources. The historic districts and cultural resources overlay districts are intended to:

A. Promote the conservation, preservation, protection, and enhancement of cultural resources, landmarks and historic districts, sites, buildings, structures and objects significant in history, architecture, archaeology, and culture which impart a distinct aspect to the city and serve as visible reminders of the city's culture and heritage;
B. Deter demolition, destruction, alteration, misuse, or neglect of historically, culturally, archaeologically or architecturally significant districts, sites, buildings and objects that form an important link to the city's past;
C. Encourage development tailored to the character and significance of each historic district or landmark through an historic district conservation plan that includes goals, objectives, and design standards;
D. Provide a review process for the appropriate preservation and development of important cultural, architectural and historical resources; and
E. Promote maintenance of a harmonious outward appearance of both historic and modern structures through complementary scale, form, color, proportion, texture and material. (Ord. 710 § 35-12.1, 1996; 1991 Code § 35-12.1)

b. 18.45.060 Procedure

I. General. An application for an amendment to the zoning map for an "H" historic district designation or "CR" cultural resources designation shall be processed pursuant to the procedures and criteria of PHMC Chapter 18.125 and the criteria of this section.
II. Additional application contents.
    A. Historic district application. In addition to the application contents required for an amendment to the zoning map pursuant to PHMC Chapter 18.125, an application for an amendment to the zoning map for an "H" historic district designation shall include a proposed historic district conservation plan for the "H" historic district containing:
        1. A map and description of the proposed "H" historic district, including boundaries; photographs of buildings in the proposed district; an inventory of the age, setting, character and architectural, cultural or historical significance of structures in the proposed district; and proposed objectives to be achieved in the "H" historic district;
        2. A statement of the architectural, cultural, or historical significance of the proposed "H" historic district and a description of structures and features to be preserved;
        3. A list of specific categories of exterior alterations that require approval of a certificate of appropriateness to preserve the architectural or historical integrity of the proposed "H" historic district; and
        4. A set of specific performance guidelines and standards for reviewing applications for demolition of buildings, new construction and exterior alterations, signs, landscape and streetscape features that will preserve the integrity of the "H" historic district. Where an "H" historic district designation is initiated by the city, the architectural review commission shall assist in the preparation of the historic district conservation

plan. When the applicant is not the city, a form bearing the signatures of all of the property owners within the proposed "H" historic district requesting the designation must be submitted at the time the application is filed.

B. Cultural resources district application. In addition to the application contents required for an amendment to the zoning map under PHMC Section 18.125.030, an application for an amendment to the zoning map for a "CR" cultural resources designation shall include the following:
   1. A map showing the location of the building or structure and building plans or photographs of the building exterior;
   2. A statement of the cultural significance of the building or structure, and a description of the particular features that should be preserved; and
   3. Except when initiated by the city, the consent of the owner or authorized agent of the building or structure proposed for designation.

C. Review and recommendation of zoning administrator. Upon determination that the application for amendment to the zoning map for an "H" historic district designation or "CR" cultural resources designation is complete, the zoning administrator shall prepare a staff report.

D. Architectural review commission review. After completion of the staff report, but before scheduling the planning commission public hearing, the zoning administrator shall refer the application for amendment to the zoning map for an "H" historic district designation or "CR" cultural resources designation to the architectural review commission for review and recommendation to the planning commission and the city council.

E. Recommendation by planning commission/action by city council. An application for an amendment to the zoning map for an "H" historic district designation or "CR" cultural resources shall be the subject of public hearings before the planning commission and the city council. (Ord. 890 § 24, 2015; Ord. 710 § 35-12.10, 1996; 1991 code § 35-12.10)

c. 18.45.070 Criteria for Establishment of Historic Districts and Cultural Resources Designations

A. General criteria. In addition to the criteria for amendments to the zoning map established in PHMC Chapter 18.125, the city council shall consider the following criteria in determining whether to adopt an ordinance designating an "H" historic district or "CR" cultural resources:
   1. The area, structures or site possesses value as a visible reminder of the cultural heritage of the city.
   2. The area, structure or site is identified with a person, group, or event that contributed significantly to the cultural or historical development of the city.
   3. Structures within the area exemplify a particular architectural style or way of life important to the city.
   4. Structures within the area are the best remaining examples of an architectural style in a neighborhood.
   5. The area or its structures are identified as the work of a person or group whose work has influenced the heritage of the city.
   6. The area or its structures embody elements of outstanding attention to architectural or landscape design, detail, materials, or craftsmanship.

7. The area is related to a designated historic or landmark building or district in such a way that its preservation is essential to the integrity of the building or district.
8. Specific evidence exists that unique archaeological resources are present.

3.4.4 - Impacts and Mitigation Measures

Significance Criteria

According to 2019 CEQA Guidelines, Appendix G, to determine whether impacts related to cultural resources are significant environmental effects, the following questions are analyzed and evaluated. Would implementation of the proposed plan:

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 formal cemeteries?

d) 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 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)?

e) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

Approach to Analysis

This evaluation focuses on whether implementation of the proposed plan would impact historic, archaeological, or tribal cultural resources.

The historic resources impact analysis is based on information collected from record searches at the NWIC, additional archival research, pedestrian surveys, and information from a historic architectural assessment of existing properties more than 45 years in age located within plan area boundaries. The archeological and human remains impact analysis is based on information collected from record searches at the NWIC, the NAHC, additional archival research, pedestrian surveys, and outreach to Native American representatives identified by the NAHC as potentially having an interest in or additional information on the plan area.

Both direct and indirect effects of the proposed plan implementation were considered for this analysis. Direct impacts are typically associated with construction and/or ground-disturbing activities, and have the potential to immediately alter, diminish, or destroy all or part of the character and quality of archaeological resources and/or historic architecture. Indirect impacts are typically associated with post-project implementation conditions that have the potential to alter or diminish the historical setting of a cultural resource (generally historic architecture) by introducing visual intrusions on existing historical structures that are considered undesirable.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of impacts to cultural and tribal cultural resources resulting from implementation of the proposed plan.

- Impair a historic resource's eligibility ability to convey its significance (i.e., affect a resources' inclusion in the NRHP or CRHR) or not adhere to the Secretary of Interior's Standards for Rehabilitation.
- Physically damage or destroy archaeological data or human remains.
- Physically damage, destroy, or otherwise adversely impact a site, feature, place, or cultural landscape with cultural value to a California Native American tribe and that is a resource determined by the City of Napa, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

Impact Evaluation

Historic Resources

Impact CUL-1:	**The proposed plan would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.**

Construction

Civic Project

Three existing historic resources have been previously recorded within a 0.5-mile radius of the Civic Project site, however, none are located within the boundaries of the Civic Project, and none were encountered during the pedestrian field survey.

Residential Project

Three existing historic resources have been previously recorded within a 0.5-mile radius of the Residential Project site; however, none are located within the boundaries of the Residential Project site.

The Pleasant Hill Library located at 1750 Oak Park Boulevard was built 1961. Due to the age of the building, a Historic Resource Evaluation Report was conducted to identify and evaluate the subject property as a potential historic resource. Based on the investigation, per Criterion 3 of the CRHR (distinctive characteristics of a type, period, region, or method of construction), the Pleasant Hill Library building, being an International-style, Mid-century Modern-era building, meets the requirements to be determined a significant resource and eligible for listing in the CRHR. For

purposes of the CHRIS, the Pleasant Hill Library is assigned California Historical Resource Status Code 3CS as a property that has been found eligible for listing in the CRHR through survey evaluation. As such, demolition of the existing library building would result in an adverse impact to this historic resource. This would represent a potentially significant impact.

Although implementation of Mitigation Measure (MM) CUL-1a (which requires documentation of the Pleasant Hill Library using the Historic American Building Survey Level II Standards) and MM CUL-1b (which requires the project sponsor for the Residential Project to install an interpretive sign or display at the proposed library) would lessen the historic loss to the community as a whole, the demolition of the existing library building would remain a significant impact.

Operation

Civic Project and Residential Project

Impacts related to the potential for implementation of the Civic Project and Residential Project to cause a substantial adverse change in the significance of a historical resource are limited to construction impacts. No respective operational impacts would occur from implementation of either the Civic Project or the Residential Project.

Level of Significance Before Mitigation

Potentially Significant (Residential Project)

No Impact (Civic Project)

Mitigation Measures

MM CUL-1a Prepare Historic American Building Survey Report for the Existing Library Prior to Demolition

Residential Project: The project sponsor for the Residential Project shall be responsible to have prepared documentation of Pleasant Hill Library using the Historic American Building Survey (HABS) Level II standards as the guideline for recording the building through photographs, drawings, and written description prior to demolition. The following documentation will be determined as adequate to document and record the historic resource:

- Written Data: The historic narrative and architectural description prepared for this current study should suffice unless the location of additional drawings or plans by Corlett and Spackman for the Pleasant Hill Library are discovered, and can provide additional information to document the history of the library.
- Drawings: Under HABS Level II, if the original drawings of the interior and exterior elevations of the library building are available, they should be reproduced in ink on vellum or Mylar. If the original drawings/plans for the interior and exterior elevations of library building cannot be located, then drawings should be prepared by a licensed architect as follows:
  1. Drawings can be hand-drawings or computer-drawn, using archival ink or pencil on vellum or Mylar.

2. Scaled drawings created based on field measurements for interior and exterior elevations.
3. Scaled drawings created based on field measurements for interior and exterior elevations.
4. Provide details of any character-defining elements such as exposed beams, curtain glass and Vitrenamel units, roof buttress, main room pillar, etc.
5. If recently executed measured drawings exist, they may substitute for the need to create new drawings.

- Photographs: High-quality, color digital photographs, captured by a professional architectural photographer may be used to fully document the property. HABS Level II photo-documentation standards require a representative number of photographs be produced to capture interior and exterior views, and character-defining architectural details, of each section of the library building. It is also recommended that a representative number of photographs be taken to show the building's setting in context, and in relationship to its surrounding environment. Digital cameras should be 6 megapixels or higher, and prints (4" x 5", 5" x 7", or 8" x 10") be printed on archival stable paper with correct labeling and an accompanying shot maps.
- High-quality, color digital photographs, captured by a professional architectural photographer may be used to fully document the property. HABS Level II photo-documentation standards require a representative number of photographs be produced to capture interior and exterior views, and character-defining architectural details, of each section of the library building. It is also recommended that a representative number of photographs be taken to show the building's setting in context, and in relationship to its surrounding environment. Digital cameras should be 6 megapixels or higher, and prints (4" x 5", 5" x 7", or 8" x 10") be printed on archival stable paper with correct labeling and an accompanying shot maps.

MM CUL-1b Provide History of the Libraries of Pleasant Hill Public Interpretive Display

Residential Project: The project sponsor for the Residential Project shall be responsible to have a "History of the Libraries of Pleasant Hill" interpretive sign or display available for public viewing in the proposed new library. The interpretive sign or display shall present a history (comprised of narrative text and photographs) of the previous libraries in the community, and the significance of the International Style of architecture to the design of the Pleasant Hill Library. The interpretive display shall be prepared by a qualified Architectural Historian or Historian with experience in creating such exhibits and materials for educational purposes. The design and content of the interpretive display shall be approved by the City of Pleasant Hill Planning Division and the County Librarian (or their designee).

Level of Significance After Mitigation

Significant and Unavoidable with Mitigation (Residential Project)

No Impact; no mitigation is necessary (Civic Project)

Archaeological Resources

Impact CUL-2: The proposed plan could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

Construction

Civic Project

Records search results from the NWIC indicate the presence of archaeological resources within 0.5 mile of the Civic Project site. Pedestrian surveys did not reveal the existence of any archaeological resources within the Civic Project site; however, large sections, particularly those in proximity to Grayson Creek, were obscured by ground cover thus limiting the efficacy of the survey. As such, there is a moderate probability of encountering undiscovered archaeological resources in proximity to Grayson Creek, a natural resource that has been utilized by inhabitants of the area since prehistoric times. Such resources could consist of but are not limited to stone, bone, wood, or shell artifacts or features, including hearths and structural elements. Implementation of MM CUL-2, which requires inspection of the plan area following grubbing and clearing, and also requires monitoring of ground disturbance in close proximity to Grayson Creek would ensure that any inadvertent discovery of an archaeological resource is properly identified and treated in accordance with federal and State regulations. Therefore, the construction impact related to unknown archeological resources would be less than significant with mitigation.

Residential Project

Records search results from the NWIC indicate the presence of archaeological resources within 0.5 mile of the Residential Project site. Pedestrian surveys did not reveal the existence of any archaeological resources within the Residential Project site; however, the site is largely covered by impervious surfaces, limiting the efficacy of the survey. As such, there is a moderate probability of encountering undiscovered archaeological resources.

Implementation of MM CUL-2, which requires inspection of the plan area following grubbing and clearing, and implementation of identification and treatment procedures in accordance with federal and State regulations in the event of any inadvertent discovery of an archaeological resource, would ensure that the potential construction impact related to unknown archeological resources would be less than significant with mitigation.

Operation

Civic Project and Residential Project

Impacts related to the proposed plan's potential to cause a substantial adverse change in the significance of an archeological resource are limited to construction impacts. No respective operational impacts would occur.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

MM CUL-2 Conduct Construction Archeological Resources Monitoring

Civic Project: An Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology should inspect the Civic Project site once grubbing and clearing is complete, and prior to any grading or trenching into previously undisturbed soils. Due to an increased probability of encountering undiscovered resources, the archaeologist shall monitor all grading and ground disturbing activities taking place within 100 feet of Grayson Creek. If the archaeologist believes that a reduction in monitoring activities is prudent, then a letter report detailing the rationale for making such a reduction and summarizing the monitoring results shall be provided to the City of Pleasant Hill for concurrence. In the event a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities within a 100-foot radius of the find shall cease and workers shall avoid altering the materials until an archaeologist has evaluated the situation. The City and Recreation and Park District shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Potentially significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. The archaeologist shall make recommendations concerning appropriate measures that will be implemented to protect the resource, including but not limited to excavation and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines. Any previously undiscovered resources found during construction within the Civic Project shall be recorded on appropriate California Department of Parks and Recreation (DPR) 523 forms and will be submitted to the City of Pleasant Hill, the Northwest Information Center, and the State Historic Preservation Office (SHPO), as required.

Residential Project: An archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology should inspect the Residential Project site once grubbing and clearing is complete, and prior to any grading or trenching into previously undisturbed soils. If the archaeologist believes that a reduction in monitoring activities is prudent, then a letter report detailing the rationale for making such a reduction and summarizing the monitoring results shall be provided to the City of Pleasant Hill for concurrence. In the event a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities within a 100-foot radius of the find shall cease and workers shall avoid altering the materials until an archaeologist has evaluated the situation. The County shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Potentially significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. The archaeologist shall make recommendations

concerning appropriate measures that will be implemented to protect the resource, including but not limited to excavation and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines. Any previously undiscovered resources found during construction within the Residential Project site shall be recorded on appropriate DPR 523 forms and will be submitted to the City of Pleasant Hill, the Northwest Information Center, and the SHPO, as required.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Burial Sites

Impact CUL-3: The proposed plan could disturb human remains, including those interred outside of formal cemeteries.

Construction

Civic Project and Residential Project

No human remains or cemeteries are known to exist within or near the plan area. There is always the possibility, however, that subsurface construction activities associated with the proposed plan, such as trenching and grading, could potentially damage or destroy previously undiscovered human remains. This would represent a potentially significant impact.

However, in the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and Section 5097.98 must be followed. In the unlikely event that human remains are discovered, implementation of MM CUL-3 would reduce the construction impact related to previously undiscovered human remains to less than significant with mitigation.

Operation

Civic Project and Residential Project

Impacts related to a proposed plan's potential to disturb human remains are limited to construction impacts. No respective operational impacts would occur.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

MM CUL-3 Stop Construction Upon Encountering Human Remains

Civic Project and Residential Project: In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and Section 5097.98 shall be followed. (This mitigation may affect both projects depending on the location of any discovered remains.)

If during the course of construction of the Civic Project or the Residential Project, there is accidental discovery or recognition of any human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance within 100 feet of the remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the MLD of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resource Code Section 5097.98.
2. Where the following conditions occur, the landowner or his or her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendant or within the plan area in a location not subject to further subsurface disturbance:
   - The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission.
   - The descendant identified fails to make a recommendation.
   - The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner.

Additionally, California Public Resources Code Section 15064.5 requires the following relative to Native American Remains:

- When an initial study identifies the existence of, or the probable likelihood of, Native American Remains within a project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop a plan for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American Burials with the appropriate Native Americans as identified by the Native American Heritage Commission.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Listed or Eligible Tribal Cultural Resources

Impact CUL-4: The proposed plan would not cause a substantial adverse change in the significance of a Tribal Cultural Resource that is 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).

Construction

Civic Project and Residential Project

No listed or potentially eligible tribal cultural resources have been identified within the plan area. Specifically, a review of the CRHR, the NAHC Sacred Lands File, a records search conducted at the NWIC, and a pedestrian survey of the plan area failed to identify any listed tribal cultural resources that could be adversely affected by construction of the Civic Project and Residential Project. As such, there are no known eligible or potentially eligible tribal cultural resources that could be adversely affected by implementation of the proposed plan. Therefore, no construction impacts related to previously listed or eligible tribal cultural resources would occur.

Operation

Civic Project and Residential Project

Impacts related to the potential for the Civic Project and Residential Project to cause a substantial adverse change in the significance of a listed or eligible tribal cultural resource are limited to construction impacts. No respective operational impacts would occur.

Level of Significance

No Impact (Civic Project and Residential Project)

Lead Agency Determined Tribal Cultural Resources

Impact CUL-5: The proposed plan would not cause a substantial adverse change in the significance of a tribal cultural resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

Construction

Civic Project and Residential Project

On May 10, 2018, a letter was sent to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the plan area. A response was received on May 15, 2018, indicating that the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate plan area. The NAHC included a list of six tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential tribal cultural resources that may be affected by the Civic Project and Residential Project are addressed, a letter containing information on the proposed plan and requesting any additional information was sent to each tribal representative on December 19, 2018. No responses have been received to date.

Additionally, the City of Pleasant Hill provided formal notification to applicable Native American Governments on pursuant to California AB 52 and SB 18 on November 20, 2018. No requests for consultation were received within the specified timeframe, however a subsequent request for

information was received from Wilton Rancheria, who had previously not requested consultation pursuant to AB 52. The City provided formal notification of the Civic Project and Residential Project and general plan amendment to Wilton Rancheria on February 1, 2019. Wilton Rancheria replied by e-mail on February 24, 2019, stating that, with regards to the Pleasant Hill 2003 General Plan Amendment and SB 18, the Tribes only concern was that in the event of the discovery of Native American Artifacts or Human remains, procedures outlined in the ARPA (16 USC 469), NAGPRA (25 USC 3001-30013), Health and Safety Code Section 7050.5, and Public Resources Code Section 5097.9 et al., be followed. Wilton Rancheria sent a second e-mail on February 26, 2019, requesting additional information about proposed plan pursuant to AB 52. A copy of all records search results and draft mitigation measures were sent to Wilton Rancheria for review and comment on February 27, 2019. No additional comments or requests for consultation have been received to date. The City of Pleasant Hill, in its capacity as lead agency, has also not identified or determined any tribal cultural resources to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. As such, no construction impacts related to known tribal cultural resources would occur.

There is always a possibility that previously undiscovered tribal cultural resources may be encountered during plan-related ground disturbance. As such, implementation of MM CUL-2 and MM CUL-3 would require construction archeological resources monitoring to be conducted and that construction be stopped upon encountering human remains. Therefore, construction impacts related to lead agency determined tribal cultural resources would less than significant with mitigation.

Operation

Civic Project and Residential Project

Impacts related to the potential of the Civic Project and Residential Project to cause a substantial adverse change in the significance of a lead agency determined tribal cultural resource are limited to construction impacts. No respective operational impacts would occur.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

Implement MM CUL-2 and MM CUL-3 (Civic Project and Residential Project)

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

3.4.5 - Cumulative Impacts

Historic Resources

The relevant geographic scope for historic resources is the City of Pleasant Hill. The library building, located at 1750 Oak Park Boulevard on the Residential Project site is eligible for listing under the City of Pleasant Hill's Criteria for Establishment of Historic Districts and Cultural Resources Designations (Pleasant Hill Municipal Code 18.45.070). The library building therefore qualifies as a historic resource under CEQA. Since the Residential Project would involve the demolition of the library building, this would result in a significant and unavoidable impact related to a known historic resource.

According to the assessment conducted by Daly and Associates in August 2018, the library building exhibits the distinctive characteristics of an International style, Mid-Century Modern-era building; a style that was pioneered by the architect Le Corbusier and the Bauhaus school in the 1920s and 1930s. The building embodies the International style that is characterized by an emphasis on function, and is devoid of decorative and regional decorative motifs. The library building also possesses elements of Mid-Century Modern style architecture through its creative use of geometric shapes, use of exposed steel beam framing, glass mosaic tile, and Vitrenamel panels framed in the exterior curtain walls. Furthermore, the library building has also retained the levels of physical integrity as presented in the aspects of the original design, materials, workmanship, location, association, setting, and feeling, which should be present to convey a properties historic significance.

The library building is not only an excellent example of International style Mid-Century Modern architecture, but it is also a rare example of a mid-century building with a major space comprised of a round room with associated framing structure, located in Contra Costa County. According to the assessment, the library building is a structure that exemplifies the Mid-Century Modern style of architecture and is one of the best remaining examples of Mid-Century Modern style architecture in Pleasant Hill. The building's demolition therefore, would be a significant contributing factor to an overall cumulative impact to historic resources within the City of Pleasant Hill. Implementation of Mitigation Measure (MM) CUL-1a requires documentation of the Pleasant Hill Library using the Historic American Building Survey Level II Standards and MM CUL-1b requires the project sponsor for the Residential Project to install an interpretive sign or display at the proposed library. These mitigation measures would lessen the historic loss to the community as a whole; however the cumulative impact to historic resources would be significant and unavoidable with mitigation.

Archeological Resources

The geographic scope of the cumulative archeological resources analysis is the vicinity of the plan area. Archeological resource impacts tend to be localized, because the integrity of any given resource depends on what occurs in the immediate vicinity around that resource, such as disruption of soils; therefore, in addition to the plan area itself, the area near the plan area boundary (generally within a 0.5-mile radius), would be the area most affected. Given that the proposed plan would not have a known, direct impact on any known archaeological resources, cumulative project impacts are less than significant.

Construction activities associated with cumulative development projects in the plan area vicinity may have the potential to encounter undiscovered cultural resources. For example, construction of the proposed daycare facility across Oak Park Boulevard could combine with implementation of the proposed plan to result in a cumulative archeological resources impact. These cumulative projects would be required to mitigate for impacts through compliance with applicable federal and State laws governing cultural resources. Additionally, the implementation of standard construction mitigation measures would ensure that undiscovered cultural resources are not adversely affected by plan-related construction activities, which would prevent the destruction or degradation of potentially significant cultural resources in the vicinity of the plan area. Given the standard archeological resources mitigation measures that would apply to the cumulative projects (including the proposed plan), the cumulative impact related to archaeological resources would be less than significant with mitigation.

Tribal Cultural Resources

Given that the proposed plan would have no impact on previously recorded or considered tribal cultural resources, the proposed plan could not combine with other cumulative projects to have a cumulative impact related to tribal cultural resources. Therefore, there would be no cumulative tribal cultural resources impact.

Overall

The demolition of the existing Pleasant Hill Library building, located at 1750 Oak Park Boulevard on the Residential Project site and determined to be a historic resource under CEQA would result in a significant and unavoidable cumulative impact with regards to historic resources within the City of Pleasant Hill.

Level of Cumulative Significance Before Mitigation

Significant and Unavoidable (Residential Project)

Less Than Significant (Civic Project)

Cumulative Mitigation Measures

Implement MM CUL-1a and MM CUL-1b (Residential Project)

Level of Cumulative Significance After Mitigation

Significant and Unavoidable (Residential Project)

Less Than Significant (Civic Project)

THIS PAGE INTENTIONALLY LEFT BLANK

3.5 - Geology and Soils

3.5.1 - Introduction

This section describes the existing geology and soils in the region and Specific Plan area (plan area) as well as the relevant regulatory framework. This section also evaluates the possible impacts related to geology and soils that could result from implementation of the Specific Plan (proposed plan). Information in this section is based on project-specific Geotechnical Exploration prepared by ENGEO for the Civic Project site, dated July 2, 2018 and revised September 24, 2018; the project-specific Geotechnical Exploration prepared by ENGEO for the Residential Project site, dated September 4, 2018; and a Paleontological Records Search performed by Kenneth Finger, PhD, all of which are included in Appendix F. The analysis in this section is also based on review of the Pleasant Hill 2003 General Plan and the United States Geological Survey (USGS). No comments were received during the Environmental Impact Report (EIR) scoping period related to geology and soils.

3.5.2 - Environmental Setting

Geologic Setting

Contra Costa County Area

Contra Costa County and surrounding areas are located in the Coast Ranges geomorphic province of California. The Coast Ranges geomorphic province is characterized by a system of northwest-trending, fault-bounded mountain ranges and intervening alluvial valleys. Bedrock in the Coast Ranges consists of igneous, metamorphic, and sedimentary rocks that range in age from Jurassic to Pleistocene. The present topography and geology of the Coast Ranges are the result of deformation and deposition along the tectonic boundary between the North American Plate and the Pacific Plate. Plate boundary fault movements are largely concentrated along the well-known fault zones, which in the area include the San Andreas, Hayward, and Calaveras Faults, as well as other lesser-order faults.[1]

Plan Area

The plan area is located in southeast Pleasant Hill and is underlain by soils that are consistent with alluvial fan deposits of the Holocene era.[2]

Existing Soils

Corrosive soils are a geologic hazard, because they react with concrete and ferrous metals, which can cause damage to foundations and buried pipelines. Expansive soils are a geologic hazard, because an increase in soil volume can exert forces on structures and, thus, damage building foundations, walls, and floors. In general, areas are susceptible to differential settlement if underlain by compressible sediments, such as poorly engineered artificial fill or loose unconsolidated alluvial sediments. When these soils dry out and shrink, structural damage can occur.

[1] ENGEO Inc. Pleasant Hill Library and Park Geotechnical Exploration Report, September 24, 2018, page 4.
[2] *Ibid*.

City of Pleasant Hill

The City of Pleasant Hill lies mostly atop Quaternary clays and clay loams deposited by stream activity. Alluvium is older in west Pleasant Hill and younger in eastern Pleasant Hill where stream activity is more prevalent. Hilly areas of the City represent outcrops of older volcanic and sedimentary bedrock.[3]

Plan Area

The plan area is located within the west portion of Ygnacio Valley. Ygnacio Valley represents an area of low relief, between Mount Diablo within the Diablo Range to the east and the Briones Hills within the East Bay Hills to the west.[4] Bedrock exposed in the Briones Hills directly west of the plan area generally comprises units of the Monterey Formation and Martinez Group.[5]

Civic Project

Soils underlying the proposed library and park components contain alluvial fan deposits, which are commonly unconsolidated, heterogeneous, poorly to moderately sorted, irregularly interbedded clays and silts containing discontinuous lenses of sand, silty clay, and gravel. The alluvium soils may consist of moderately to highly expansive clay to sandy clay.[6] These soils could experience settlement of up to 0.5 inches once the Civic Project structures are complete.[7] Potentially expansive soils were also encountered near the surface and would be considered corrosive.[8,9] Similar soil types and soil properties are anticipated under Oak Park Boulevard, Monticello Avenue and Grayson Creek Corridor.

Residential Project

Soils consist of mostly clay and silty clay, with interbedded layers of silty sand, sandy silt, and poorly graded sand. In addition, there is an existing layer of fill between 2.5- and 5.5-feet-thick beneath the surface that could be related to the filling of old channels.[10] Soil settlement could occur due to consolidation of clayey soils and could result in up to 1 to 1.5 inches of settlement.[11] Expansive high plasticity clay soils were found near the surface in the southern portion of the Residential Project site, and expansive silty and lean clay was encountered near the surface in the northern area of the Residential Project site. These clayey soils are expansive and could experience moderate to very high shrink/swell potential.

Seismicity

The term seismicity describes the effects of seismic waves that are radiated from an earthquake fault in motion. While most of the energy released during an earthquake results in the permanent displacement of the ground, as much as 10 percent of the energy may dissipate immediately in the form of seismic waves. Seismicity can result in seismic-related hazards such as fault rupture, ground

[3] Pleasant Hill. 2003 General Plan. Safety and Noise: Geologic Hazards, page 61.
[4] ENGEO Inc. Pleasant Hill Library and Park Geotechnical Exploration Report, September 24, 2018, page 4.
[5] *Ibid.*
[6] *Ibid.*
[7] *Ibid.*, 15.
[8] *Ibid.*, 12.
[9] *Ibid.*, Appendix B.
[10] ENGEO Inc. 1750 Oak Park Boulevard Geotechnical Exploration Report, September 4, 2018, page 4.
[11] *Ibid.*, 11.

shaking, and liquefaction. Faults form in rocks when stresses overcome the internal strength of the rock, and fault rupture occurs when movement on a fault breaks through to the surface and can result in damage to infrastructure and persons. Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. Strong ground shaking from an earthquake can result in damage, with buildings shifted off their foundations and underground pipes being broken. Liquefaction occurs when an earthquake causes ground shaking that result in saturated soil losing shear strength, deforming, and acting like a liquid. When liquefaction occurs, it can result in ground failure that can result in damage to roads, pipelines, and buildings

The San Francisco Bay Area contains numerous active earthquake faults. Because of the presence of nearby active faults, the San Francisco Bay Area is considered seismically active. Numerous small earthquakes occur every year in the San Francisco Bay Area, and larger earthquakes have been recorded and can be expected to occur in the future. According to the third version of Uniform California Earthquake Forecast (UCERF 3), there is an aggregated 98 percent probability of a moment magnitude 6.0 (Richter scale) or greater earthquake occurring in the plan area on an active Bay Area fault over the next 30 years.

Contra Costa County Area

Contra Costa County has been subjected to numerous seismic events, originating both on faults within the County and in other parts of the region. Six major Bay Area earthquakes have occurred since 1800 that affected the County, and at least two of the faults that produced them run through or into the County. These earthquakes and the originating faults include the 1836 and 1868 earthquakes on the Hayward Fault, and the 1861 earthquake on the Calaveras Fault. Two earthquakes, in 1838 and 1906, originated on the San Andreas Fault, west of the County near San Francisco or to the south, while one earthquake (with two major shocks) that caused some damage in the County occurred in 1872 and was centered north of Contra Costa County in the Vacaville-Winters area of Solano County. These latter events likely occurred on a thrust fault and are not known to have been accompanied by surface fault rupture. A smaller earthquake, centered near Collinsville in Solano County on a fault of uncertain identity, occurred in 1889.

Using the available data and information, an earthquake probability estimate has been developed for Contra Costa County and is shown in Table 3.5-1.

Table 3.5-1: Approximate Probability of Occurrence of Earthquake on Bay Area Faults

Causative Fault	Magnitude	Approximate Probability of Occurrence (over a 50-year period)
San Andreas	7.0–8.0	Likely[1]
	8.0–8.5	Intermediate[2]
Hayward	6.0–7.0	Likely
	7.0–7.5	Intermediate

Table 3.5-1 (cont.): Approximate Probability of Occurrence of Earthquake on Bay Area Faults

Causative Fault	Magnitude	Approximate Probability of Occurrence (over a 50-year period)
Calaveras	6.0–7.0	Likely
	7.0–7.5	Intermediate-Low[3]
Concord	5.0–6.0	Likely
	6.0–7.0	Intermediate-Low
Antioch	5.0–6.0	Likely
	6.0–7.0	Intermediate-Low

Notes:
[1] Greater than 50 percent probability of occurrence
[2] A 15-50 percent probability of occurrence
[3] Less than 15 percent probability of occurrence
Source: Contra Costa County Conservation and Development Department estimates

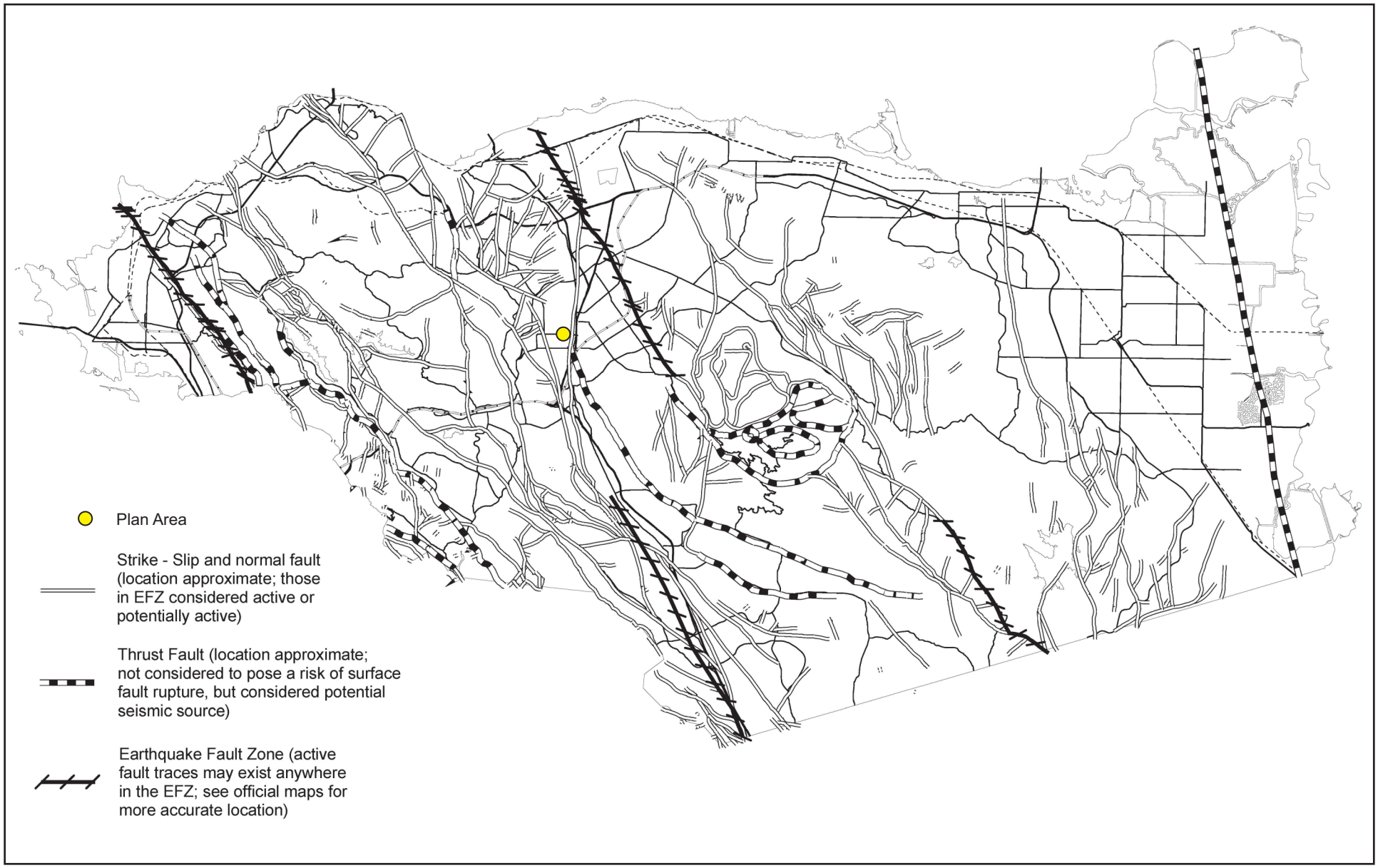
City of Pleasant Hill

Local faults in the City of Pleasant Hill are considered inactive and insignificant, including the possible ancestral trace of the Calaveras Fault that runs north-to-south through the eastern part of the City.[12]

Plan Area

According to both Geotechnical Exploration Reports, the plan area is located in a seismically active region with the potential to experience strong ground shaking but is not located near active faults.[13] The plan area is not located within a State of California Earthquake Fault Hazard Zone for active faults, and no known faults cross the plan area boundaries.[14] An active fault is defined by the State Mining and Geology Board as one that has had surface displacement within Holocene time (about the last 11,000 years). The Concord fault, Mount Diablo Thrust fault, and Calaveras Fault are the closest known active faults to the plan area. The Concord fault is located approximately 2.8 miles northeast, while[15] the Mount Diablo Thrust fault is located 4.3 miles to the east, and the Calaveras Fault is located 8.7 miles to the south. Exhibit 3.5-1 shows the regional faults in relation to the plan area.

[12] ENGEO Inc. Pleasant Hill Library and Park Geotechnical Exploration Report, September 24, 2018, page 4.
[13] *Ibid.*
[14] *Ibid.*, 8.
[15] *Ibid.*, 5.



Source: U.S. Geological Survey (Graymer, Jones and Brabb, 1994; and Earthquake Fault Zone Maps (California Geological Survey)

FIRSTCARBON SOLUTIONS™

Exhibit 3.5-1
Regional Fault Map

THIS PAGE INTENTIONALLY LEFT BLANK

Slope Disturbance

Slope disturbance from long-term geologic cycle of uplift, mass wasting, intense precipitation or wind, and gravity can result in slope failure in the form of mudslides and rock fall. Mass wasting refers to a variety of erosional processes from gradual downhill soil creep to mudslides, debris flows, landslides, and rock fall—processes that are commonly triggered by intense precipitation or wind, which varies according to climactic shifts. Often, various forms of mass wasting are grouped together as landslides, which are generally used to describe the downhill movement of rock and soil. Soil creep is a long-term, gradual downhill migration of soil under the influence of gravity and is generally on the order of a fraction of an inch per year. These soils can creep away downslope sides of foundations and reduce lateral support.

City of Pleasant Hill

The City of Pleasant Hill does not contain active faults that would cause geologic uplifting.[16] According to Figure 10-6 Landslide Susceptibility Zones in the Contra Costa County Hazard Mitigation Plan, the City of Pleasant Hill is located in an area designated as having a "Low" risk for landslides.

Plan Area

Civic Project

Based on USGS topographic maps, the Civic Project site slopes to the north and east toward the creek, with elevations ranging from 75 feet above mean seal level (MSL) in the southwest corner to 71 feet above MSL in the northeast corner.[17]

Residential Project

The Residential Project site consists of gentle sloping from the north to south. Elevation of the site ranges from 85 feet above MSL in the northwest to 75 feet in the southeast corner.

Paleontological Resources

City of Pleasant Hill

The Pleasant Hill 2003 General Plan and Pleasant Hill 2003 General Plan Draft EIR do not provide information regarding paleontological resources within Pleasant Hill.

Plan Area

A paleontological records search was conducted for the plan area by Kenneth L. Finger, PhD. The plan area and all areas within the 0.5-mile search area are located on Holocene alluvium (Qa). Pleistocene alluvium (Qoa) extends to within the search area and in addition, further to the west and southwest, are the Martinez Formation (Tmz) and Monterey Group (Tms, Tmc). Holocene deposits are too young to be fossiliferous but all other nearby geologic units are potentially fossiliferous.[18]

[16] *Ibid*., 4.
[17] *Ibid*., 5.
[18] Kenneth L. Finger, PhD, Consulting Paleontologist. Paleontological Records Search. May 14, 2019.

3.5.3 - Regulatory Framework

Federal

National Earthquake Hazards Reduction Program

The National Earthquake Hazards Reduction Program was established by the U.S. Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law 95-124. In establishing the National Earthquake Hazards Reduction Program, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early warning systems, coordinated emergency preparedness plans, and public education and involvement programs. The four basic goals remain unchanged:

- Develop effective practices and policies for earthquake loss reduction and accelerate their implementation.
- Improve techniques for reducing earthquake vulnerabilities of facilities and systems.
- Improve earthquake hazards identification and risk assessment methods, and their use.
- Improve the understanding of earthquakes and their effects.

Several key federal agencies contribute to earthquake mitigation efforts. There are four primary National Earthquake Hazards Reduction Program agencies:

- National Institute of Standards and Technology of the Department of Commerce
- National Science Foundation
- USGS of the Department of Interior
- Federal Emergency Management Agency (FEMA) of the Department of Homeland Security

Implementation of National Earthquake Hazards Reduction Program priorities is accomplished primarily through original research, publications, and recommendations to assist and guide state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program, authorized by Section 402(p) of the federal Clean Water Act, controls water pollution by regulating point sources, such as construction sites and industrial operations that discharge pollutants into waters of the United States. A Storm Water Pollution Prevention Plan (SWPPP) is required to control discharges from a project site during construction, including soil erosion, to protect waterways. A SWPPP describes the measures or practices to control discharges during construction phases of a project. A SWPPP identifies project design features and structural and nonstructural Best Management Practices (BMPs) that will be used to control, prevent, remove, or reduce stormwater pollution from the site, including sediment from erosion, during construction. For post-construction operational phases, additional measures such as low impact development and other BMPs may be required.

Society of Vertebrate Paleontology Guidelines

The Society of Vertebrate Paleontology, a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation.[19] Most practicing professional paleontologists in the nation adhere to the Society of Vertebrate Paleontology's assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code [PRC] §§ 2621–2630) was passed in 1972 to provide a Statewide mechanism for reducing the hazard of surface fault rupture to structures used for human occupancy. The main purpose of the Act is to prevent the siting of buildings used for human occupancy across the traces of active faults. It should be noted that the Act addresses the potential hazard of surface fault rupture and is not directed toward other earthquake hazards, such as seismically-induced ground shaking or landslides.

The law requires the State Geologist to identify regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults, and to depict these zones on topographic base maps, typically at a scale of 1 inch to 2,000 feet. Earthquake Fault Zones vary in width, although they are often 0.75-mile wide. Once published, the maps are distributed to the affected cities, counties, and State agencies for their use in planning and controlling new or renewed construction. With the exception of single-family wood-frame and steel-frame dwellings that are not part of a larger development (i.e. four units or more), local agencies are required to regulate development within the mapped zones. In general, construction within 50 feet of an active fault zone is prohibited.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (PRC §§ 2690 to 2699.6), which was passed in 1990, addresses earthquake hazards other than surface fault rupture. These hazards include strong ground shaking, earthquake-induced landslides, liquefaction, or other ground failures. Much like the Alquist-Priolo Earthquake Fault Zoning Act discussed above, these seismic hazard zones are mapped by the State Geologist to assist local government in the land use planning process. The Act states, "it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety." The Act also states, "cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard."

[19] Society of Vertebrate Paleontology (SVP). 1995. Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources—Standard Guidelines. Society of Vertebrate Paleontology News Bulletin, v. 163, pages 22–27.

California Building Code

The 2015 International Building Code is published by the International Code Council, and is the widely adopted model building code in the United States. The 2016 California Building Code (2016 CBC) is another name for the body of regulations known as the California Code of Regulations, Title 24, Part 2, which is a portion of the CBC. The CBC incorporates by reference the International Building Code requirements with necessary California amendments. Title 24 is assigned to the California Building Standards commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable.

Compliance with the 2016 CBC requires that (with very limited exceptions) structure for human occupancy be designated and constructed to resist the effects of earthquake motions. The Seismic Design Category for a structure is determined in accordance with either California Building Code Section 1613—Earthquake Loads, or American Society of Civil Engineers Standard No. 7-05, Minimum Design Loads for Buildings and Other Structures. In brief, based on the engineering properties and soil-type of soils at a proposed site, the site is assigned a Site Class ranging from A to F. The Site Class is then combined with Spectral Response (ground acceleration induced by earthquake) information for the location to arrive at a Seismic Design Category ranging from A to D, of which D represents the most severe conditions. The classification of a specific site and related calculations must be site specific and determined by a qualified person.

Local

Pleasant Hill 2003 General Plan

Safety and Noise Element

The Pleasant Hill 2003 General Plan established the following goals, policies, and programs related to geology, soils, and seismicity that are relevant to the proposed plan:

- **Safety and Noise Goal 3:** Reduce potential harm to people and property from geologic and seismic hazards.
- **Safety and Noise Policy 3A:** Ensure that structures are designed and located to withstand strong ground shaking, liquefaction and seismic settlement.
- **Safety and Noise Policy 3B:** Avoid development in areas at risk for slope failure, and ensure that hillside developments employ appropriate design and construction techniques.
- **Safety and Noise Program 3.1:** Adopt and enforce the most recently state approved building code provisions necessary to promote seismic safety in structural designs, including regulations relating to grading and construction relative to seismic hazards, liquefaction potential, and development on sloping ground.
- **Safety and Noise Program 3.2:** Require geotechnical studies for development in areas with moderate to high liquefaction potential that include analysis of seismic settlement potential that include analysis of seismic settlement potential and specify appropriate mitigation.
- **Safety and Noise Program 3.3:** Continue to require slope stability assessments by appropriate registered professionals upon the initiation of new development proposals in areas of known slope instability and/or on slopes steeper than 15 percent.

Pleasant Hill Municipal Code/Zoning Ordinances

Building and Construction

The City adopted the 2016 CBC and included it in Pleasant Hill Municipal Code Chapter 14.05. Section 14.05.010 incorporates Title 24 of the California Code of Regulations by reference, which applies to new construction and alterations within City limits. New development is required to adhere to building code requirements and industry standard seismic safety building practices.

Chapter 15.10, Grading, outlines the regulations applicable to grading activities within the City of Pleasant Hill, including details for every stage of grading from when a permit is required to excavation and inspection. In addition, this chapter identifies erosion control measures to be implemented during grading activities.

3.5.4 - Impacts and Mitigation Measures

Thresholds of Significance

According to the 2019 CEQA Guidelines Appendix G Environmental Checklist, to determine whether impacts to geology and soils are significant environmental effects, the following questions are analyzed and evaluated. Would the proposed plan:

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? Refer to Division of Mines and Geology Special Publication 42.
   ii. Strong seismic ground shaking?
   iii. Seismic-related ground failure, including liquefaction?
   iv. Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, 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 in 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 wastewater 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?

Approach to Analysis

Impacts related to geology and soils were determined by reviewing information contained in the Geotechnical Reports and a Paleontological Records Search prepared for the plan area, both of which are provided in Appendix F.

As part of the Geotechnical Reports, ENGEO performed a field exploration of the Civic Project site as summarized in the project-specific Geotechnical Exploration for the Civic Project site dated July 2, 2018 and revised September 24, 2018 (Appendix F.2) and summarized in the project-specific Geotechnical Exploration for the Residential Project dated September 4, 2018 (Appendix F.1). ENGEO collected samples in the field during the explorations. In addition, ENGEO retained a subcontractor with a cone penetration testing rig to advance five cone penetration tests to a depth of up to 70 feet below ground surface. Published geologic and geotechnical information that summarizes the site conditions were also reviewed.

Additional evaluations of potential geologic and soil impacts of the plan area were based on review of available documentation, including the Pleasant Hill 2003 General Plan; USGS "Shake Map" webpage; the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey; and the Association of Bay Area Governments (ABAG), California Geological Survey, and USGS data and publications.

Impacts to paleontological resources were determined by reviewing the Paleontological Records Search prepared by Dr. Kenneth Finger, a consulting paleontologist. Dr. Finger performed a records search on the University of California Museum of Paleontology (UCMP) database for the plan area.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of geology and soils impacts resulting from implementation of the proposed plan.

- Place structures on or within the State designated zone of a known earthquake fault.
- Place structures where seismic ground shaking of a Strong level or greater according to the Mercalli Scale could occur.
- Place structures on soils prone to any level of liquefaction.
- Place structures on slopes greater than 15 percent or soils susceptible to failure as defined by the USGS.
- Place structures in areas without impervious surfaces or vegetation, or on slopes greater than 15 percent.
- Place structures on a geologic unit or soil that is unstable or that could become unstable.
- Place structures on expansive soil that has an expansion index greater than 20 as defined in Table 18-1-B of the Uniform Building Code (1994).
- Place septic tanks or alternative wastewater disposal systems on soils incapable of supporting the use.
- Physically damage or destroy paleontological deposits.

Impact Evaluation

Seismic-related Hazards

Impact GEO-1: **The proposed plan could 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? Refer to Division of Mines and Geology Special Publication 42.**
- **ii) Strong seismic ground shaking.**
- **iii) Seismic-related ground failure, including liquefaction.**
- **iv) Landslides.**

Construction

Civic Project and Residential Project

Impacts related to risks associated with seismic-related hazards are limited to operational impacts. No respective construction impacts would occur.

Operation

Ground Rupture

Civic Project and Residential Project

Based on geotechnical report (Appendix F), for the Civic Project site and the Residential Project site, the potential for ground rupture is low. There are no known active faults directly crossing the plan area and it is not located within a designated Alquist-Priolo Earthquake Fault Zone. In addition, the closest fault to the plan area is the Concord Fault located 2.8 miles to the northeast. As such, it is unlikely for ground rupture to occur. Thus, implementation of the proposed plan would not expose people or structures to substantial adverse effects associated with fault rupture. Therefore, no impact related to fault rupture would occur.

Strong Seismic Ground Shaking

Civic Project and Residential Project

The plan area is located within proximity of several major faults that have potential to generate strong ground shaking during a seismic event. Strong ground shaking can be expected from moderate to major earthquakes on other faults in the region such as the Hayward-Rogers Creek Fault (located 17.4 miles west). The intensity of future shaking will depend on the distance to the earthquake epicenter, magnitude of the earthquake and the response of the underlying soil and bedrock. Both the Civic Project and the Residential Project could experience strong seismic ground shaking. This represents a potentially significant impact.

The geotechnical reports for the Civic Project site and Residential Project site provide recommendations for foundation type, building material, and excavation in order to ensure new construction associated with both the Civic Project and the Residential Project can withstand strong to very strong ground shaking. Mitigation Measure (MM) GEO-1 would ensure that implementation of both the Civic Project and the Residential Project would incorporate recommendations contained

in the respective geotechnical report and all applicable seismic safety building standards contained in the CBC including seismic design provisions, which would reduce the risk of loss, injury or death. As such, with implementation of MM GEO-1, implementation of both the Civic Project and the Residential Project would not expose people or structures to substantial adverse effects associated with seismic ground shaking. Therefore, impacts would be less than significant with mitigation.

Seismic-related Ground Failure

Civic Project

According to the USGS Liquefaction Susceptibility Map the Civic Project is located in an area designated as a "Moderate" risk for liquefaction. In addition, the geotechnical report prepared for the Civic Project site determined that soils could experience liquefaction-induced settlement of up to 9 inches, with an average of 5 inches in the proposed park and parking area, and an average of 1 inch in the proposed library area. According to the geotechnical report prepared for the Civic Project site (Appendix F.2), flexible utility connections should be provided at building faces and as needed throughout the parking areas, which it includes as part of its recommendations.

In order to reduce or avoid impacts related to liquefaction or other seismic-related ground failure at the proposed library, the geotechnical report for the Civic Project site (Appendix F.2) recommends that the library incorporate a total settlement of 1 inch and differential settlement of 0.5 inches over a horizontal distance of 50 feet due to liquefaction settlement in the foundation. In addition, the geotechnical report for the Civic Project site recommends providing flexible connections for building utilities that allow for 0.5 inches of vertical movement without breaking, and that utilities should be designed with flexible materials or joints that allow the utility line to move at least 0.5 inches over a distance of 50 feet without breaking.

MM GEO-1 would require the incorporation of specific recommendations included in the geotechnical report prepared for the Civic Project site (Appendix F.2) related to seismic-related ground failure risk, and, with implementation of MM GEO-1, impacts related to seismic-related ground failure risk would be less than significant with mitigation.

Residential Project

According to the USGS Liquefaction Susceptibility Map the Residential Project site is located in an area designated as a "Moderate" risk for liquefaction.[20] In addition, the geotechnical report prepared for the Residential Project (Appendix F.1) determined that soils could experience liquefaction-induced settlement of up to 2.5 inches, representing a potentially significant impact related to seismic-related ground failure risk.

In order to reduce or avoid impacts related to liquefaction or other seismic-related ground failure, the geotechnical report prepared for the Residential Project site (Appendix F.1) recommends that the Residential Project incorporate a total settlement of 2.5 inches in the project designs, provide flexible connections for building utilities that allow for 1.25 inches of vertical movement, and further recommends that utilities serving the Residential Project be designed with flexible materials or joints that allow utility lines to move at least 1.25 inches over a distance of 40 feet without breaking.

[20] United States Geological Survey (USGS). Maps of Quaternary Deposits and Liquefaction Susceptibility, 2006.

Implementation of MM GEO-1 would ensure that the recommendation contained in the geotechnical report prepared for the Residential Project site (Appendix F.1) are incorporated into the Residential Project design. Therefore, impacts related to seismic-related ground failure risk would be less than significant with mitigation.

Landslides

Civic Project and Residential Project

Susceptibility to landslide risk is increased where a property contains steep slopes, exposed hillsides or near-vertical cuts often found near creek banks. The plan area does not contain steep slopes, exposed hillsides, or vertical cuts; the site ranges in elevation from 73 feet above MSL to 85 feet above MSL.[21,22] Due to the gently sloping nature of the plan area, it does not contain a significant potential for landslides. As a result, implementation of the proposed plan would not expose people or structures to a landslide hazard, and impacts related to landslides would be less than significant.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

MM GEO-1 Prepare Grading and Construction Plans that Incorporate Geotechnical Study Reports Recommendations

Civic Project: Prior to issuance of the grading permits for the Civic Project, development of the final grading and foundation plans shall incorporate the site-specific earthwork, foundation, slab-on-grade, retaining walls, and pavement design recommendations, as detailed in the geotechnical report prepared for the Civic Project site prepared by ENGEO, Inc. on July 2, 2018 (revised September 24, 2018). The project sponsors for the Civic Project shall coordinate with a City-approved Geotechnical Engineer and Engineering Geologist to tailor the grading and foundation plans, as needed, to reduce risk related to known soil and geologic hazards and to improve the overall stability of the Civic Project site. The final grading plans for the Civic Project shall be reviewed by the City-approved Geotechnical Engineer.

Grading operations shall also meet the requirements of the recommendations included in the geotechnical report prepared for the Civic Project site prepared by ENGEO, Inc. on July 2, 2018 (revised September 24, 2018). During construction, the City-approved Geotechnical Engineer shall monitor construction of the Civic Project to ensure the earthwork operations are properly performed.

Residential Project: Prior to issuance of the grading permits for the Residential Project, development of the final grading and foundation plans shall incorporate the site-specific earthwork, foundation, slab-on-grade, retaining walls, and pavement design recommendations, as detailed in the geotechnical report for the Residential

[21] ENGEO. 1750 Oak Park Boulevard Geotechnical Exploration Report, September 4, 2018, page 1.
[22] *Ibid*., 10.

Project site prepared by ENGEO, Inc. on September 4, 2018. The project sponsor for the Residential Project shall coordinate with a City-approved Geotechnical Engineer and Engineering Geologist to tailor the grading and foundation plans, as needed, to reduce risk related to known soil and geologic hazards and to improve the overall stability of the Residential Project site. The final grading plans for the Residential Project shall be reviewed by the City-approved Geotechnical Engineer.

Grading operations shall also meet the requirements of the recommendations included in the geotechnical report for the Residential Project site prepared by ENGEO, Inc. on September 4, 2018. During construction, the City-approved Geotechnical Engineer shall monitor construction of the Residential Project to ensure the earthwork operations are properly performed.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Soil Erosion or Topsoil Loss

Impact GEO-2: The proposed plan could result in substantial soil erosion or the loss of topsoil.

Construction

Civic Project

The Civic Project would disturb at least 1 acre of land and would be required to obtain a Construction General Permit from the State Water Resources Control Board (State Water Board), consistent with the City of Pleasant Hill's General Permit (No. CAS0029912) and to comply with its conditions and requirements, which are designed to minimize potential erosion issues. Consistent with Section 15.05.070 BMPs and Standards, compliance with the City's NPDES permit would ensure BMPs are implemented that would prevent sediments and other pollutants from entering the stormwater system. Therefore, with adherence to these existing requirements, impacts from construction of the Civic Project would not result in substantial soil erosion or loss of topsoil. Therefore, construction-related impacts related to soil erosion and loss of topsoil would be less than significant.

Residential Project

The Residential Project would disturb at least 1 acre of land and would be required to obtain a Construction General Permit from the State Water Board, consistent with the City of Pleasant Hill's General Permit (No. CAS0029912) and to comply with its conditions and requirements, which are designed to minimize potential erosion issues. Consistent with Section 15.05.070, BMPs and Standards, compliance with the City's NPDES permit would ensure BMPs are implemented that would prevent sediments and other pollutants from entering the stormwater system. Therefore, with adherence to these existing requirements, impacts from construction of the Residential Project would not result in substantial soil erosion or loss of topsoil. Therefore, construction-related impacts related to soil erosion and loss of topsoil would be less than significant.

Operation

Impacts related to soil erosion or loss of topsoil are limited to construction impacts. No respective operational impacts would occur.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Unstable Geologic Location

Impact GEO-3:	**The proposed plan would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the proposed plan, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.**

Construction

Civic Project and Residential Project

Impacts related to risks associated with location on an unstable geologic unit or soil are limited to operational impacts. No respective construction impacts would occur.

Operation

Civic Project

As discussed previously in Impact GEO-1(iii), seismic-related ground failure, including liquefaction, the geotechnical report prepared for the Civic Project site (Appendix F.2) identified soils in the proposed park area that could be expected to experience up to 9 inches of liquefaction-induced settlement with an average of 5 inches across the entire northern portion. The proposed library could experience up to 1-inch of liquefaction-induced settlement. The identified settlement across the park component and library component would represent a significant impact.

The geotechnical study prepared for the Civic Project site (Appendix F.2) recommends that the library incorporate a total settlement of 1-inch and differential settlement of 0.5-inch over a horizontal distance of 50 feet because of the liquefaction settlement in the foundation. In addition, the geotechnical report prepared for the Civic Project site recommends providing flexible connections for building utilities that allow for 0.5-inch of vertical movement without breaking and utilities should be designed with flexible materials or joints that allow the utility line to move at least 0.5-inch over a distance of 50 feet without breaking. Implementation of MM GEO-1 would ensure that the recommendations contained in the geotechnical report prepared for the Civic Project site related to an unstable soil or geologic unit risks are incorporated into the design of the Civic Project. Therefore, impacts related to unstable soil or geologic unit risks for the Civic Project would be less than significant with mitigation.

Residential Project

As discussed under Impact GEO-1(iii), the geotechnical report prepared for the Residential Project site (Appendix F.1) identified soils that would be expected to experience up to 2.5 inches of liquefaction-induced settlement representing a potentially significant impact related to seismic-related ground failure risk. The geotechnical report prepared for the Residential Project site

determined that the risk from on- or off-site landslides would be low due to the relatively flat topography of this property.

In order to reduce or avoid impacts related to liquefaction or other seismic-related ground failure, the geotechnical report prepared for the Residential Project site recommends that the Residential Project incorporate a total settlement of 2.5 inches and differential settlement of 12.5-inch over a horizontal distance of 40 feet because of liquefaction settlement in the foundation. In addition, the geotechnical report prepared for the Residential Project site recommends providing flexible connections for building utilities that allow for 1.5-inch of vertical movement without breaking and utilities should be designed with flexible materials or joints that allow the utility line to move at least 1.25-inch over a distance of 40 feet without breaking. Implementation of MM GEO-1 would ensure that the aforementioned recommendations contained in the geotechnical report prepared for the Residential Project site are incorporated into the design of the Residential Project. Therefore, impacts related to seismic-related ground failure risk for the Residential Project would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

Implement MM GEO-1 (Civic Project and Residential Project)

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Expansive Soil

Impact GEO-4:	**The proposed plan could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.**

Construction

Civic Project and Residential Project

Impacts related to risks associated with location on expensive soil are limited to operational impacts. No respective construction impacts would occur.

Operation

Civic Project

The geotechnical report prepared for the Civic Project site (Appendix F.2) for the Civic Project identified potentially expansive sandy lean clay and silty clay soils exist near the surface. As part of the geotechnical report prepared for the Civic Project site, ENGEO tested these soils and concluded that they exhibit moderate to high shrink/swell potential with a plasticity index ranging from 31 to 33. These soils have the potential to shrink and swell as they gain moisture, which could cause building foundations to crack or heave resulting in substantial risks to life or property. As a result,

soils underlying the Civic Project would create a substantial risk to life or property, representing a potentially significant impact.

However, the geotechnical report prepared for the Civic Project site includes recommendations for site preparation and foundation design that would address the site-specific conditions. Implementation of MM GEO-1 would ensure recommendations contained in the geotechnical report prepared for the Civic Project site are included in the design of the Civic Project. Therefore, impacts related to expansive soils would be less than significant with mitigation.

Residential Project

The geotechnical report prepared for the Residential Project site (Appendix F.1) for the Residential Project identified expansive high plasticity clay near the surface in the southern area of Residential Project site and expansive silty and lean clay near the surface in the northern area of the Residential Project site. As part of the geotechnical report prepared for the Residential Project site, ENGEO tested these soils and concluded that they exhibit moderate to very high shrink/swell potential with a plasticity index ranging from 24 to 38. These soils have the potential to shrink and swell as they gain moisture, which could cause building foundations to crack or heave resulting in substantial risks to life or property. As a result, soils underlying the Residential Project site would create a substantial risk to life or property, representing a potentially significant impact.

The geotechnical report prepared for the Residential Project site includes recommendations for site preparation and foundation design that would address the site-specific conditions. Implementation of MM GEO-1 would ensure recommendations contained in the geotechnical report prepared for the Residential Project site are included in the design of the Residential Project. Therefore, impacts related to expansive soils would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

Implement MM GEO-1 (Civic Project and Residential Project)

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Soil Adequacy to Support Alternative Wastewater Disposal Systems

Impact GEO-5:	**The proposed plan would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.**

Construction

Civic Project and Residential Project

Impacts related to soil capability of supporting the use of alternative wastewater disposal systems are limited to operational impacts. No respective construction impacts would occur.

Operations

Civic Project and Residential Project

All development associated with the plan area would be connected to the existing Central Contra Costa County Sanitary District (Central San) wastewater system, and no alternative wastewater disposal system would be operated. Thus, there would be no operational impact related to soil capability of supporting the use of alternative wastewater disposal systems.

Level of Significance Before Mitigation

No Impact (Civic Project and Residential Project)

Destruction of Paleontological Resource or Unique Geologic Feature

Impact GEO-6:	**The proposed plan could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.**

Construction

Civic Project and Residential Project

The paleontological report (Appendix F.3) concluded that the plan area is located on Holocene alluvium, which is too young to be fossiliferous; however, it likely overlies Pleistocene alluvium, which has a high paleontological sensitivity. While there are no known unique geological features located within the plan area, Contra Costa County has produced a large number of Pleistocene localities and specimens; therefore, excavations of previously undisturbed deposits could impact significant paleontological resources. The potential destruction of paleontological resources or unique geologic features during construction represents a potentially significant impact.

MM GEO-6 requires construction paleontological monitoring of excavations into previously undisturbed Pleistocene alluvium. In the event that significant paleontological resources are discovered, implementation of MM GEO-6 would reduce impacts related to the destruction of paleontological resources or unique geologic features to less than significant.

Operations

Civic Project and Residential Project

Impacts related to the proposed plan's potential to cause substantial adverse change in the significance of a unique paleontological resource or unique geologic feature are limited to construction. No respective operational impacts would occur.

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

MM GEO-6 Paleontological Resources Monitoring During Construction

Civic Project and Residential Project: A paleontological monitor shall be present during all excavations that exceed 10 feet in depth or otherwise have the potential to impact previously undisturbed Pleistocene alluvium. In the event a fossil is

discovered during construction for the proposed plan, excavations within 50 feet of the find shall be temporarily halted or delayed until the discovery is examined by a qualified paleontologist in accordance with Society of Vertebrate Paleontology standards. The project sponsors for the Civic Project and Residential Project shall include a standard inadvertent discovery clause in every proposed plan-related construction contract to inform contractors of this requirement. If the find is determined to be significant and if avoidance is not feasible, the paleontologist shall design and implement a data recovery plan that is consistent with the Society of Vertebrate Paleontology standards. Any recovered fossil should be deposited in an appropriate repository, such as the UCMP, where it will be properly curated and made accessible for future studies.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

3.5.5 - Cumulative Impacts

The geographic scope of the cumulative geology and soils analysis is the plan area and its vicinity. Adverse effects associated with many geology and soils tend to be localized; therefore, an area generally within a 0.25-mile radius would be the area most affected by activities associated with the proposed plan. The Fountainhead Montessori Day Care project located at 1715-1725 Oak Park Boulevard would be within 0.25 mile of the plan area.

Cumulative projects, including the proposed plan, have the potential to experience strong to violent ground shaking from earthquakes. The other cumulative projects listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, would be exposed to the same ground shaking hazards and likewise would be subject to the same requirements. Cumulative projects would adhere to the provisions of the California Building Code, and policies of the City of Pleasant Hill 2003 General Plan and Pleasant Hill City Code reducing potential hazards associated with seismic ground shaking and ground failure. As such, the proposed plan, in conjunction with other cumulative projects, would not result in a cumulative impact associated with seismic-related hazards.

Soil-related Hazards

Soil conditions associated with the proposed plan, such as differential settlement, expansive soils, and soil creep, are specific to the plan area and generally do not contribute to a cumulative effect. Some or all other cumulative projects may have similar conditions but they also would not contribute to a general geologic or soil cumulative effect. The proposed plan would be subject to all City of Pleasant Hill 2003 General Plan policies, City code policies, and the CBC reducing soil-related hazard impacts. Other current and future development/redevelopment projects in the region would similarly be required to adhere to standards and practices that include stringent geologic and soil-related hazard mitigations. As such, the proposed plan, in conjunction with other projects, would not have a cumulatively significant impact associated with soil-related hazards.

Unique Geological Feature and Paleontological Resources

The geographic scope of the cumulative unique geologic resources and paleontological resources analysis is the plan area and its immediate vicinity. Geologic resources and paleontological resource impacts tend to be localized, because the integrity of any given resource depends on what occurs only in the immediate vicinity around that resource, such as disruption of soils.

Construction activities associated with development of cumulative projects in within the vicinity of the plan area may have the potential to encounter undiscovered geologic resources and paleontological resources. These cumulative projects would be required to mitigate for impacts through compliance with applicable federal and State laws governing geologic resources and paleontological resources. The likelihood that geologic resources and paleontological resources are present on the cumulative project sites is relatively low, given that the majority of soil disturbance associated with these projects will take place within Holocene soils too young to be fossiliferous. Although there is the possibility that previously undiscovered resources could be encountered by subsurface earthwork activities, the implementation of standard construction mitigation measures would ensure that undiscovered geologic and paleontological resources are not adversely affected by cumulative project-related construction activities, which would prevent the destruction or degradation of potentially significant cultural resources in the vicinity of the plan area. Given the low potential for disruption and the comprehensiveness of mitigation measures that would apply to the cumulative projects in the vicinity, the proposed plan, in conjunction with other planned and approved projects, would result in a less than significant with mitigation cumulative impact related to unique geologic and paleontological resources.

Level of Cumulative Significance

Less Than Significant (Civic Project and Residential Project)

3.6 - Greenhouse Gas Emissions and Energy

3.6.1 - Introduction

This section describes the existing greenhouse gas (GHG) emissions and energy setting within the Specific Plan area (plan area) as well as the relevant regulatory framework. This section also evaluates the possible impacts related to GHG emissions and energy that could result from implementation of the Specific Plan (proposed plan). Information in this section is based on GHG emissions and energy modeling outputs included in Appendix C. During the Environmental Impact Report (EIR) scoping period, the following comments were received related to GHG emissions and energy:

- Recommendation for the proposed plan to include a Transportation Demand Management Program to reduce vehicle miles traveled (VMT) and GHG emissions (see Section 3.14, Transportation and Transportation Impact Assessment in Appendix J for transit-, bicycle-, and pedestrian-rated mitigation measures that would reduce VMT. [Note that the proposed plan was determined to result in lower VMT than the existing Citywide residential VMT average]).
- Recommendation for the proposed plan to include electric vehicle (EV) charging stations in the parking lot.

3.6.2 - Environmental Setting

Greenhouse Effect, Global Warming, and Climate Change

Most of the energy that affects the Earth's climate comes from the sun. Some solar radiation is absorbed by the Earth's surface, and a smaller portion of this radiation is reflected by the atmosphere back toward space. As the Earth absorbs high frequency solar radiation, its surface gains heat and then re-radiates lower frequency infrared radiation back into the atmosphere.[1]

Most solar radiation passes through gases in the atmosphere classified as GHGs; however, infrared radiation is selectively absorbed by GHGs. GHGs in the atmosphere play a critical role in maintaining the balance between the Earth's absorbed and radiated energy, the Earth's radiation budget,[2] by trapping some of the infrared radiation emitted from the Earth's surface that otherwise would have escaped to space (Figure 3.6-1). Radiative forcing is the difference between the incoming energy and outgoing energy.[3] Specifically, GHGs affect the radiative forcing of the atmosphere,[4] which in turn affects the Earth's average surface temperature. This phenomenon, the *greenhouse effect*, keeps the Earth's atmosphere near the surface warmer than it would be otherwise and allows successful habitation by humans and other forms of life.

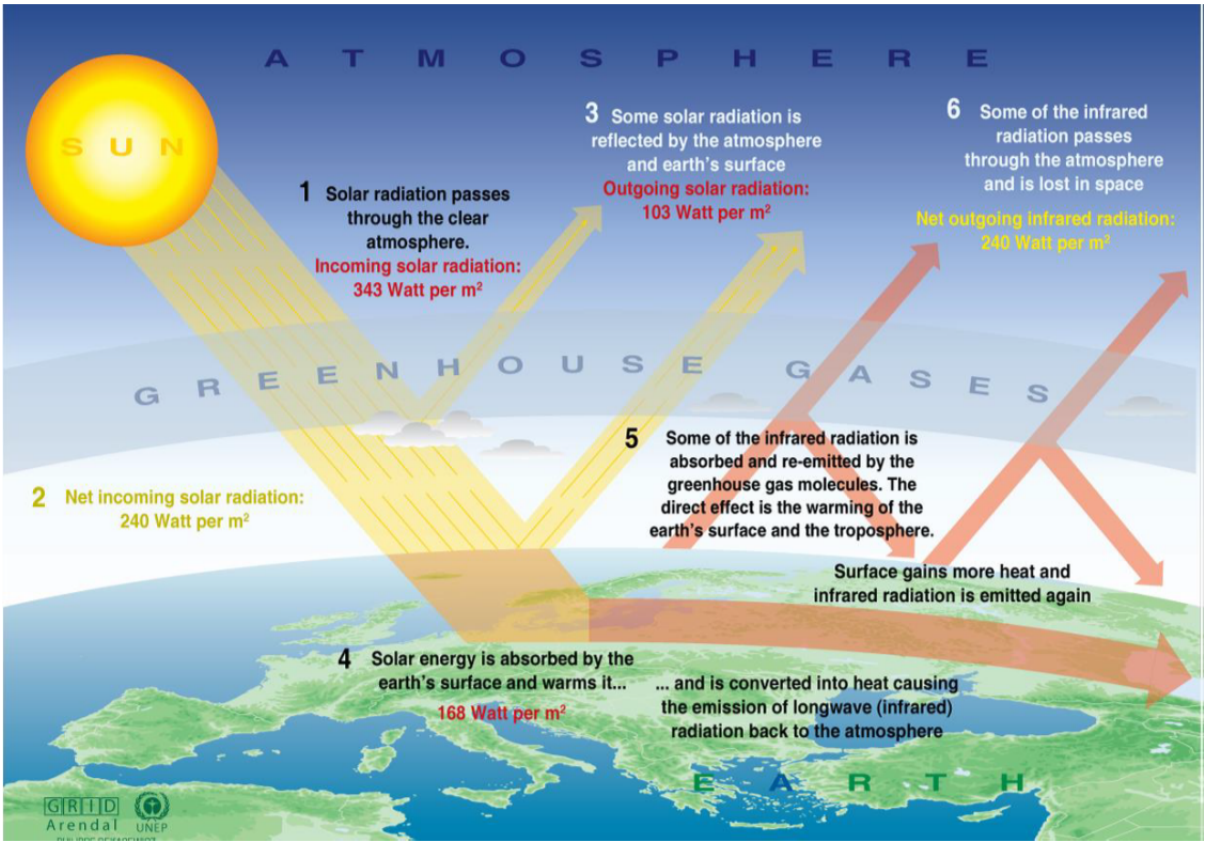
Combustion of fossil fuels and deforestation release carbon into the atmosphere that historically has been stored underground in sediments or in surface vegetation, thus exchanging carbon from the

[1] Frequencies at which bodies emit radiation are proportional to temperature. The Earth has a much lower temperature than the sun and emits radiation at a lower frequency (longer wavelength) than the high frequency (short-wavelength) solar radiation emitted by the sun.
[2] This includes all gains of incoming energy and all losses of outgoing energy; the planet is always striving to be in equilibrium.
[3] Positive forcing tends to warm the surface while negative forcing tends to cool it.
[4] This is the change in net irradiance at the tropopause after allowing stratospheric temperatures to readjust to radiative equilibrium, but with surface and tropospheric temperatures and state held fixed at the unperturbed values.

geosphere and biosphere to the atmosphere in the carbon cycle. With the accelerated increase in fossil fuel combustion and deforestation since the Industrial Revolution of the 19th century, concentrations of GHGs in the atmosphere have increased exponentially. Such emissions of GHGs in excess of natural ambient concentrations contribute to the enhancement of the natural greenhouse effect. This enhanced greenhouse effect has contributed to *global warming*, an increased rate of warming of the Earth's average surface temperature.[5] Specifically, increases in GHGs lead to increased absorption of infrared radiation by the Earth's atmosphere and warm the lower atmosphere further, thereby increasing temperatures and evaporation rates near the surface.

Variations in natural phenomena such as volcanoes and solar activity produced most of the global temperature increase that occurred during preindustrial times; more recently, however, increasing atmospheric GHG concentrations resulting from human activity have been responsible for most of the observed global temperature increase.[6]

Figure 3.6-1: The Greenhouse Effect



Source: UNEP/GRID-Arendal, 2005[7]

Global warming affects global atmospheric circulation and temperatures; oceanic circulation and temperatures; wind and weather patterns; average sea level; ocean acidification; chemical reaction

[5] This condition results when the Earth has to work harder to maintain its radiation budget, because when more GHGs are present in the atmosphere, the Earth must force emissions of additional infrared radiation out into the atmosphere.

[6] These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

[7] United Nations Environmental Program/GRID-Arendal (UNEP/GRID-Arendal). 2005. GRID-Arendal Annual Report. Website: https://cld.bz/bookdata/tRoONat/basic-html/page-1.html. Accessed June 2, 2018.

rates; precipitation rates, timing, and form; snowmelt timing and runoff flow; water supply; wildfire risks; and other phenomena, in a manner commonly referred to as *climate change*. Climate change is a change in the average weather of the Earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

Temperature Predictions by the Intergovernmental Panel on Climate Change

The United Nations Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios.[8] The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations." Warming of the climate system is now considered to be unequivocal,[9] with the global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. The IPCC predicts increases in global average temperature of between 2°F and 11°F over the next 100 years, depending on the scenario.[10]

Greenhouse Gases and Global Emission Sources

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Prominent GHGs that naturally occur in the Earth's atmosphere are water vapor, carbon dioxide (CO_2), methane (CH_4), oxides of nitrogen (NO_X), and ozone. Anthropogenic (human-caused) GHG emissions include releases of these GHGs plus release of human-made gases with high global warming potential (GWP) (ozone-depleting substances such as chlorofluorocarbons [CFCs])[11] and aerosols, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The GHGs listed by the IPCC (CO_2, methane, nitrous oxide, HFCs, PFCs, and SF_6) are discussed below, in order of abundance in the atmosphere. Water vapor, despite being the most abundant GHG, is not discussed below because natural concentrations and fluctuations far outweigh anthropogenic influences, making it impossible to predict. Ozone is not included because it does not directly affect radiative forcing. Ozone-depleting substances, which include chlorofluorocarbons,

[8] Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller [eds.]). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Website: www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html. Accessed June 15, 2017.

[9] *Ibid*.

[10] *Ibid*.

[11] CFCs destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited CFCs production in 1987.

halons, carbon tetrachloride, methyl chloroform, and hydrochlorofluorocarbons, are not included because they have been primarily replaced by HFCs and PFCs.

The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, CO_2.

Individual GHG compounds have varying potential for contributing to global warming. For example, methane is 25 times as potent as CO_2, while SF_6 is 22,200 times more potent than CO_2 on a molecule-per-molecule basis. To simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method for comparing GHG emissions is the GWP methodology defined in the IPCC reference documents.[12] The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalents (CO_2e), which compares the gas in question to that of the same mass of CO_2 (by definition, CO_2 has a GWP of 1). The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. Thus, to describe how much global warming a given type and amount of GHG may cause, the CO_2e is used. A CO_2e is the mass emissions of an individual GHG multiplied by its global warming potential. As such, a high GWP represents high absorption of infrared radiation and a long atmospheric lifetime compared to CO_2. One must also select a time horizon to convert GHG emissions to equivalent CO_2 emissions to account for chemical reactivity and lifetime differences among various GHG species. The standard time horizon for climate change analysis is 100 years. Generally, GHG emissions are quantified in terms of metric tons (MT) CO_2e emitted per year.

The atmospheric residence time of a gas is equal to the total atmospheric abundance of the gas divided by its rate of removal.[13] The atmospheric residence time of a gas is, in effect, a half-life measurement of the length of time a gas is expected to persist in the atmosphere when accounting for removal mechanisms such as chemical transformation and deposition.

Table 3.6-1 lists the GWP of each GHG and its lifetime. Units commonly used to describe the concentration of GHGs in the atmosphere are parts per million (ppm), parts per billion (ppb), and parts per trillion (ppt), referring to the number of molecules of the GHG in a sampling of 1 million, 1 billion, or 1 trillion molecules of air. Collectively, HFCs, PFCs, and SF_6 are referred to as high-GWP gases. CO_2 is by far the largest component of worldwide CO_2e emissions, followed by methane, nitrous oxide, and high-GWP gases, in order of decreasing contribution to CO_2e.

The primary human processes that release GHGs include the burning of fossil fuels for transportation, heating, and electricity generation; agricultural practices that release methane, such as livestock grazing and crop residue decomposition; and industrial processes that release smaller amounts of high-GWP gases. Deforestation and land cover conversion have also been identified as contributing to global warming by reducing the Earth's capacity to remove CO_2 from the air and altering the Earth's albedo or surface reflectance, thus allowing more solar radiation to be absorbed.

[12] Intergovernmental Panel on Climate Change (IPCC). 2014. Frequently Asked Questions. Website: https://www.ipcc-nggip.iges.or.jp/faq/FAQ.pdf. Accessed March 13, 2019.

[13] Seinfeld, J.H. and S.N. Pandis. 2006. Atmospheric Chemistry and Physics: From Air Pollution to Climate Change, 2nd Edition. New York. John Wiley & Sons.

Specifically, CO_2 emissions associated with fossil fuel combustion are the primary contributors to human-induced climate change. Carbon dioxide, methane, and nitrous oxide emissions associated with human activities are the next largest contributors to climate change.

GHGs of California concern are defined by California Assembly Bill (AB) 32 (see the Regulatory Environment subsection below for a description) and include CO_2, CH_4, NO_X, HFCs, PFCs, and SF_6. A seventh GHG, nitrogen trifluoride (NF_3), was also added under the California Health and Safety Code Section 38505(g)(7) as a GHG of concern. These GHGs are described in terms of their physical description and properties, global warming potential, atmospheric residence lifetime, sources, and atmospheric concentration in 2005 in Table 3.6-1.

Table 3.6-1: Description of Greenhouse Gases of California Concern

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
Carbon dioxide (CO_2)	Odorless, colorless, natural gas.	1	50–200	burning coal, oil, natural gas, and wood; decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; oceanic evaporation; volcanic outgassing; cement production; land use changes
Methane (CH_4)	Flammable gas and is the main component of natural gas.	25	12	geological deposits (natural gas fields) extraction; landfills; fermentation of manure; and decay of organic matter
Nitrous oxide (N_2O)	Nitrous oxide (laughing gas) is a colorless GHG.	298	114	microbial processes in soil and water; fuel combustion; industrial processes
Chloro-fluoro-carbons (CFCs)	Nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (level of air at the Earth's surface); formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms.	3,800–8,100	45–640	refrigerants aerosol propellants; cleaning solvents.

Table 3.6-1 (cont.): Description of Greenhouse Gases of California Concern

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
Hydro-fluoro-carbons (HFCs)	Synthetic human-made chemicals used as a substitute for CFCs and contain carbon, chlorine, and at least one hydrogen atom.	140 to 11,700	1–50,000	automobile air conditioners; refrigerants
Per-fluoro-carbons (PFCs)	Stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface.	6,500 to 9,200	10,000–50,000	primary aluminum production; semiconductor manufacturing
Sulfur hexafluoride (SF_6)	Human-made, inorganic, odorless, colorless, and nontoxic, nonflammable gas.	22,800	3,200	electrical power transmission equipment insulation; magnesium industry, semiconductor manufacturing; a tracer gas
Nitrogen trifluoride (NF_3)	Inorganic, is used as a replacement for PFCs, and is a powerful oxidizing agent.	17,200	740	electronics manufacture for semiconductors and liquid crystal displays.

Sources:
Intergovernmental Panel on Climate Change (IPCC). 2007a. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller [eds.]). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, Website: www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html. Accessed June 5, 2018.

Intergovernmental Panel on Climate Change (IPCC). 2007b. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Core Writing Team, Pachauri, R.K. and Reisinger, A. [eds.]). IPCC, Geneva, Switzerland. Website: www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html. Accessed June 5, 2018.

The State has begun the process of addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the Governor on September 14, 2014 required the California Air Resources Board (ARB) to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. The ARB released the Proposed Short-Lived Climate Pollutant Reduction Strategy in April 2016. The ARB has completed an emission inventory of these pollutants, identified research needs, identified existing and potential new control measures that offer co-benefits, and coordinated with other State agencies and districts to develop measures.

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 3.6-1 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, the ARB will include it in its comprehensive strategy.[14]

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

Global warming potentials for black carbon were not defined by the IPCC in its Fourth Assessment Report. ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by ARB, and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources.[15] Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions, volatile organic compounds (VOC) and oxides of nitrogen (NO_X) on a regional scale and CH_4 on a hemispheric scale will be subject of the strategy.[16]

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other GHGs, such that the warming brought about by increased CO_2 allows more water vapor to enter the atmosphere.[17]

Introduction to Global Climate Change

Global climate change is defined as the change in average meteorological conditions on Earth with respect to temperature, precipitation, and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO_2, N_2O, CH_4, hydrofluorocarbons,

[14] California Air Resources Board (ARB). 2015c. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May. Website: http://www.arb.ca.gov/cc/shortlived/concept_paper.pdf. Accessed June 3, 2017.
[15] *Ibid*.
[16] *Ibid*.
[17] National Aeronautics and Space Administration (NASA). 2015. NASA—Global Climate Change, Vital Signs of a Planet. Website: http://climate.nasa.gov/causes/. Accessed August 21, 2016.

perfluorocarbons and SF_6. These particular gases are important because of their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the Earth's atmosphere, but prevent radioactive heat from escaping, thus warming the Earth's atmosphere. Global climate change can occur naturally as it has in the past with the previous ice ages. According to the ARB, the climate change since the industrial revolution differs from previous climate changes in both rate and magnitude.

Gases that trap heat in the atmosphere are often referred to as GHGs. GHGs are released into the atmosphere by both natural and anthropogenic (human) activity. Without the natural greenhouse effect, the Earth's average temperature would be approximately 61°F cooler than it is currently. The cumulative accumulation of these gases in the Earth's atmosphere is considered to be the cause for the observed increase in the Earth's temperature.

Although California's rate of growth of GHG emissions is slowing, the State is still a substantial contributor to the U.S. emissions inventory total. In 2004, California is estimated to have produced 492 million metric tons (MMT) of CO_2e GHG emissions. Despite a population increase of 16 percent between 1990 and 2004, California has significantly slowed the rate of growth of GHG emissions because of the implementation of energy efficiency programs as well as adoption of strict emission controls.

Global Climate Change Issue

Climate change is a global problem because GHGs are global pollutants, unlike criteria air pollutants and hazardous air pollutants (also called toxic air contaminants), which are pollutants of regional and local concern. Pollutants with localized air quality effects have relatively short atmospheric lifetimes, approximately 1 day; by contrast, GHGs have long atmospheric lifetimes, several years to several thousand years. GHGs persist in the atmosphere for a long enough time to be dispersed around the globe.

Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, more CO_2 is currently emitted into the atmosphere than is sequestered. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through photosynthesis and dissolution, respectively. These are two of the most common processes of CO_2 sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, Northern Hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO_2 emissions is stored in the atmosphere.[18]

Similarly, effects of GHGs are borne globally, as opposed to the localized air quality effects of criteria air pollutants and hazardous air pollutants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known and cannot be quantified, and no single project would be expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global or local climates or microclimate.

[18] Seinfeld, J. H. and S.N. Pandis. 1998. Atmospheric Chemistry and Physics from Air Pollution to Climate Change. New York. John Wiley & Sons.

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. A cumulative discussion and analysis of associated with the Civic Project and Residential Project on global climate change is presented in this EIR because, although it is unlikely that a single project will contribute significantly to climate change, cumulative emissions from many projects affect global GHG concentrations and the climate system.

Global climate change has the potential to result in sea level rise (resulting in flooding of low-lying areas), to affect rainfall and snowfall (leading to changes in water supply), to affect temperatures and habitats (affecting biological resources and public health), and to result in many other adverse environmental consequences.

Although the international, national, State, and regional communities are beginning to address GHGs and the potential effects of climate change, worldwide GHG emissions will likely continue to rise over the next decades.

Climate and Topography

Climate is the accumulation of daily and seasonal weather events over a long period of time, whereas weather is defined as the condition of the atmosphere at any particular time and place. See Section 3.2, Air Quality, for a detailed discussion of existing regional climate and topography as well as climate and topography for the plan area.

Existing GHG Emissions

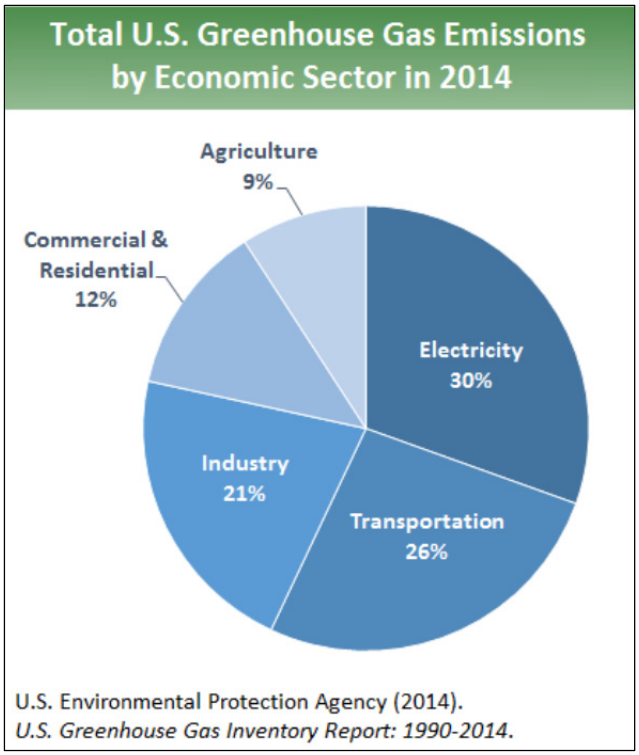
United States GHG Inventory

Total GHG emissions in the United States were approximately 1 percent higher in 2014 than in 2013.[19] Figure 3.6-2 presents 2014 United States GHG emissions by economic sector. Total United States GHG emissions increased by 7.4 percent from 1990 to 2014 (from 6,233.2 MMT CO_2e in 1990 to 6,870.5 MMT CO_2e in 2014). Since 1990, emissions in the United States have increased at an average annual rate of 0.3 percent. In 2014, cool winter conditions led to an increase in CO_2e emissions associated with fuels used for heating in the residential and commercial sectors. Transportation emissions also increased because of a small increase in vehicle miles traveled. There was also an increase in industrial production across multiple sectors, resulting in slight increases in industrial-sector emissions.[20]

[19] United States Environmental Protection Agency (EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014. EPA 430-R-16-002. Website: https://www.epa.gov/sites/production/files/2017-04/documents/us-ghg-inventory-2016-main-text.pdf. Accessed June 2, 2018.

[20] *Ibid*.

Figure 3.6-2: 2014 United States Greenhouse Gas Emissions by Gas



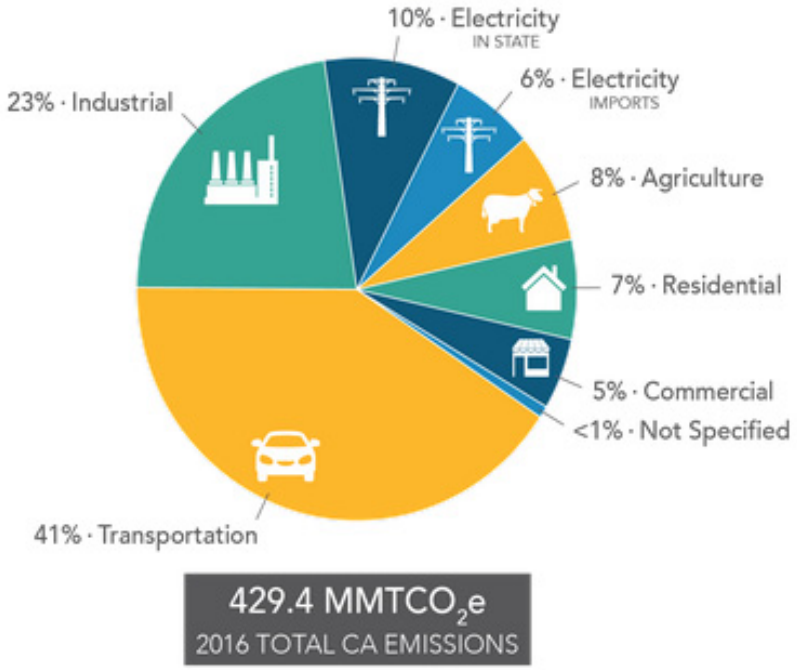
Note: Emissions shown do not include carbon sinks such as change in land uses and forestry.
Source: United States Environmental Protection Agency (EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014. EPA 430-R-16-002. Website: https://www.epa.gov/sites/production/files/2017-04/documents/us-ghg-inventory-2016-main-text.pdf. Accessed June 2, 2018.

California GHG Inventory

As the second largest emitter of GHG emissions in the United States and the 12th to 16th largest GHG emissions emitter in the world, California contributes a large quantity (429.24 MMT CO_2e in 2016) of GHG emissions to the atmosphere.[21] Emissions of CO_2 are byproducts of fossil-fuel combustion and are attributable in large part to human activities associated with transportation, industry/manufacturing, electricity and natural gas consumption, and agriculture. In California, the transportation sector is the largest emitter at 41 percent of GHG emissions, followed by industry/manufacturing at 23 percent of GHG emissions (Figure 3.6-3).

[21] California Climate Change Center. (CCCC). 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. July 2006. CEC-500-2006-077. Website: www.scc.ca.gov/webmaster/ftp/pdf/climate_change/assessing_risks.pdf. Accessed June 2, 2018.

Figure 3.6-3: 2016 California Greenhouse Gas Emissions by Sector



Source: California Air Resources Board (ARB). 2018. California Greenhouse Inventory-Graphs. Website: https://www.arb.ca.gov/cc/inventory/data/graph/graph.htm. Accessed August 27, 2018.

Bay Area Air Quality Management District GHG Inventory

The Bay Area Air Quality Management District (BAAQMD) published a GHG inventory for the San Francisco Bay Area (Bay Area), which provides an estimate of GHG emissions in the base year 2011 for all counties located in the jurisdiction of the BAAQMD: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Napa, and the southern portions of Solano and Sonoma counties.[22] This GHG inventory is based on the standards for criteria pollutant inventories and is intended to support BAAQMD's climate protection activities.

Table 3.6-2 shows the 2011 breakdown of emissions by end-use sector for each county within the BAAQMD jurisdiction. The estimated GHG emissions are presented in CO_2e, which weights each GHG by its GWP. The GWPs used in the BAAQMD inventory are from the Second Assessment Report of the IPCC.

In 2011, GHG emissions from Contra Costa County accounted for approximately 31 percent of the Bay Area's total GHG emissions, with 17.8 percent of the Bay Area's total GHG emissions coming from the industrial/commercial land uses in Contra Costa County.[23] Transportation is the largest GHG emissions sector in the Bay Area, followed by industrial/commercial, electricity generation and cogeneration, and residential fuel usage. In Contra Costa County, the largest amount of GHG emissions are generated by the industrial/commercial sector, followed by the electricity/co-generation sector.

[22] Bay Area Air Quality Management District (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011. January. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf. Accessed June 5, 2018.

[23] *Ibid.*

Table 3.6-2: 2011 County Emissions Breakdown by Sector (MMT CO_2e/Year)

Sector	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano*	Sonoma*
Industrial/Commercial	2.7	17.8	0.4	0.2	1.2	1.4	4.1	2.7	0.5
Residential Fuel	1.3	1.0	0.3	0.1	0.9	0.8	1.5	0.3	0.4
Electricity/Co-generation	0.9	7.2	0.1	0.1	0.5	0.4	2.2	0.4	0.2
Off-Road Equipment	0.2	0.2	0.0	0.0	0.2	0.1	0.4	0.0	0.
Transportation	7.9	5.0	1.3	0.9	3.0	5.0	7.6	1.6	2.0
Agriculture/Farming	0.1	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.2
Total	**13.2**	**31.4**	**2.4**	**1.5**	**5.7**	**7.7**	**16.0**	**5.1**	**3.5**

Notes:
* Portion within BAAQMD jurisdiction
BAAQMD = Bay Area Air Quality Management District; CO_2e = carbon dioxide equivalent; co-gen = cogeneration
Source: Bay Area Air Quality Management District (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011. January. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf. Accessed June 5, 2018.

Contra Costa County

A community-wide baseline (2005) GHG emissions inventory was conducted for Contra Costa County as part of the development of the Climate Action Plan (CAP).[24] Table 3.6-3 provides the estimated 2005 baseline by sector for Contra Costa County.

Table 3.6-3: 2005 Unincorporated County Baseline by Sector (excluding Stationary Source Emissions)

Sector	MT CO_2e/Year	Percentage of Total
Residential Energy	274,690	20
Nonresidential Energy	118,770	8
Solid Waste	48,450	3
Landfill	193,950	14
On-road Transportation	628,200	45
Off-Road Equipment	71,880	5
Water and Wastewater	8,080	1
Bay Area Rapid Transit (BART)	2,300	<1
Agriculture	57,320	4
Total	1,403,610	100

Source: Contra Costa County Climate Action Plan, December 2015.

[24] Contra Costa County. 2015. Contra Costa County Climate Action Plan. December 15. Website: http://www.co.contra-costa.ca.us/4554/Climate-Action-Plan. Accessed February 25, 2019.

City of Pleasant Hill

The City of Pleasant Hill has not completed a community-wide GHG emissions inventory; however, the City has completed a GHG inventory for municipal operations for the 2005 calendar year. GHG emissions were included for the following sectors related to City operations: vehicle fleet, buildings and facilities, government-generated solid waste, public lighting, employee commute, and water distribution. Within the various sectors, the following sources of GHG emissions were included:

- Fuel consumed at facilities;
- Fuel consumed by vehicle fleet and mobile equipment;
- Fuel consumed to generate electricity;
- Leaked refrigerants from facilities and vehicles;
- Leaked/deployed fire suppressants;
- Solid waste in government landfills;
- Wastewater decomposition and treatment at a municipal wastewater treatment plant;
- Purchased electricity consumed by facilities;
- Purchased electricity consumed by electric vehicles;
- Purchased steam;
- Purchased cooling (chilled water);
- Solid waste generated by government operations; and,
- Fuel consumed by vehicles during employee commuting.

The City's estimated GHG emissions from all sectors and sources that constitute municipal operations totaled 1,318 MT CO_2e for the 2005 calendar year.[25]

Plan Area

The 1750 Oak Park Boulevard property is occupied by two existing buildings: the 37,364-square-foot Pleasant Hill Library and the vacant municipal administrative offices totaling 42,083 square feet. Since the administration buildings are vacant, it is assumed that existing operations at this property only include the 37,364-square-foot library. As shown below in Table 3.6-4, the existing 37,364-square-foot library is estimated to generate approximately 1,133 MT CO_2e per year in the 2021 operational year.

Table 3.6-4: Existing Plan Area GHG Emissions

Emission Source	Total 2018 Emissions (MT CO_2e/year)	Total 2021 Emissions (MT CO_2e/year)
Area	0	0
Energy	117	113
Mobile	1,085	999
Waste	17	17
Water	5	4
Total Existing Emissions	**1,224**	**1,133**

[25] City of Pleasant Hill. 2011. City of Pleasant Hill Greenhouse Gas Emissions Inventory (Draft Submitted to the Association of Bay Area Governments [ABAG]). Year 2005 Government Operations. May. Website: http://www.cccclimateleaders.org/city-pages/local-action-q-z/pleasant-hill.html. Accessed March 1, 2019.

Climate Change Trends and Effects

CO_2 accounts for more than 75 percent of all anthropogenic GHG emissions, the atmospheric residence time of CO_2 is decades to centuries, and global atmospheric concentrations of CO_2 continue to increase at a faster rate than ever previously recorded. Thus, the warming impacts of CO_2 will persist for hundreds of years after mitigation is implemented to reduce GHG concentrations.

California

Substantially higher temperatures, more extreme wildfires, and rising sea levels are just some of the direct effects experienced in California.[26,27] As reported by the California Natural Resources Agency in 2009, despite annual variations in weather patterns, California has seen a trend of increased average temperatures, more extreme hot days, fewer cold nights, longer growing seasons, less winter snow, and earlier snowmelt and rainwater runoff. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and a larger proportion of total precipitation is falling as rain instead of snow.[28] Sea level rose by as much as seven inches along the California coast over the last century, leading to increased erosion and adding pressure to the State's infrastructure, water supplies, and natural resources.

These observed trends in California's climate are projected to continue in the future. Research indicates that California will experience overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea level rise. The frequency, intensity, and duration of extreme weather events such as heat waves, wildfires, droughts, and floods will also change.[29] In addition, increased air pollution and spread of insects potentially carrying infectious diseases will also occur as the climate-associated temperature and associated species clines shift in latitude.

The following is a summary of climate change factors and predicted trends specific to California.

In California, climate change may result in consequences such as the following.[30,31]

- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the

[26] California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008. Website: http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf. Accessed June 5, 2018.

[27] California Energy Commission. 2012. Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. Website: http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf. Accessed June 5, 2018.

[28] California Energy Commission. 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Draft Final Report. CEC-600-2006-013-D. Website: http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-D.PDF. Accessed June 5, 2018.

[29] California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008. Website: http://resources.ca.gov/docs/climate /Statewide_Adaptation_Strategy.pdf. Accessed June 5, 2018.

[30] California Climate Change Center. (CCCC). 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. July 2006. CEC-500-2006-077. Website: www.scc.ca.gov/webmaster/ftp/pdf/climate_change /assessing_risks.pdf.

[31] Moser et al. 2009. Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2008-071. Website: www.energy.ca.gov/2008publications/CEC-500-2008-071/CEC-500-2008-071.PDF.

snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.

- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of Southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more Northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Bay Area

The following is a summary of climate change factors and predicted trends specific to the Bay Area, using the latest information available as of 2014.

Temperature, Heat, Drought, and Wildfire Events

The Bay Area is expected to experience warming over the rest of the 21st century. Consistent with State-wide projections, the annual average temperature in the Bay Area will likely increase by 2.7°F between 2000 and 2050, based on GHGs that have already been emitted into the atmosphere. By the end of the century, the increase in the Bay Area's annual average temperature may range from approximately 3.5°F to 11°F relative to the average annual temperature simulated for the 1961–1990 baseline period used for the study, depending on the GHG emissions scenarios.[32] The projected rate

[32] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment. Final Paper. CEC-500-2009-014-F. Website: http://www.energy.ca.gov/2009publications /CEC-500-2009-014/CEC-500-2009-014-F.PDF. Accessed June 5, 2018.

of warming, especially in the latter half of the 21st century, is considerably greater than warming rates derived from historical observed data.

Specific predictions related to temperature/heat are summarized below.

- The annual average temperature in the Bay Area has been increasing over the last several decades.
- The Bay Area is expected to see an increase in average annual temperature of 2.7°F by 2050, and 3.5°F to 11°F by 2100. Projections show a greater warming trend during the summer season. The coastal parts of the Bay Area will experience the most moderate warming trends.[33]
- Extreme heat events are expected to increase in duration, frequency, and severity by 2050. Extreme freeze events are expected to decrease in frequency and severity by 2100, but occasional colder-than-historical events may occur by 2050.[34]

Precipitation, Rainfall, and Flooding Events

Studies of the effect of climate change on the long-term average precipitation for California show some disagreement.[35] Considerable variability exists across individual models, and examining the average changes can mask more extreme scenarios that project much wetter or drier conditions. California is expected to maintain a Mediterranean climate through the next century, with dry summers and wet winters that vary between seasons, years, and decades. Wetter winters and drier springs are also expected, but overall annual precipitation is not projected to change substantially. By mid-century, more precipitation is projected to occur in winter in the form of less frequent but larger events. The majority of global climate models predict drying trends across the State by 2100.[36]

Specific factors related to precipitation/rainfall/extreme events are summarized below.

- The Bay Area has not experienced substantial changes in rainfall depth or intensities over the past 30 years.
- The Bay Area will continue to experience a Mediterranean climate, with little change in annual precipitation projected by 2050, although a high degree of variability may persist.
- An annual drying trend is projected to occur by 2100. The greatest decline in precipitation is expected to occur during the spring months, while minimal change is expected during the winter months.
- Increases in drought duration and frequency coupled with higher temperatures, as experienced in 2012, 2013, and 2014, will increase the likelihood of wildfires.

[33] Cal-Adapt. 2014. Climate Tools. Available: http://cal-adapt.org/tools/.
[34] *Ibid*.
[35] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009. Climate Change Scenarios Assessment. Final Paper. CEC-500-2009-014-F. Website: http://www.energy.ca.gov/2009publications/CEC-500-2009-014/CEC-500-2009-014-F.PDF. Accessed June 5, 2018.
[36] California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008. Website: http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf. Accessed June 5, 2018.

- California is expected to see increases in the magnitude of extreme events, including increased precipitation delivered from atmospheric river events, which would bring high levels of rainfall during short time periods and increase the chance of flash floods. The Bay Area is also expected to see an increase in precipitation intensities, but possibly through less frequent events.[37]

Reduced Sierra Nevada Snowpack and Water Supply Shortages

If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate surface water supplies.

Vectors and Disease Events

Climate change will likely increase the vectors of insects and, in turn, may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.

Air Quality and Pollution Events

Respiratory disorders will be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution.[38] Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide, methane, SF_6, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen.[39,40]

City of Pleasant Hill

Temperature and Heat

Figure 3.6-4 displays a chart of measured historical (i.e., observed) and projected annual average temperatures in the City of Pleasant Hill area. As shown in the figure, temperatures are expected to rise as part of both the low and high GHG emissions scenarios.[41] The results indicate that temperatures are predicted to increase by 3.3°F under the low emission scenario and 5.7°F under the high emissions scenario.[42]

[37] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment. Final Paper. CEC-500-2009-014-F. Website: http://www.energy.ca.gov/2009publications /CEC-500-2009-014/CEC-500-2009-014-F.PDF. Accessed June 5, 2018.

[38] United States Environmental Protection Agency (EPA). 2009a. Ozone and your Health. EPA-456/F-09-001. Website: http://www.epa.gov/airnow/ozone-c.pdf. Accessed August 21, 2016.

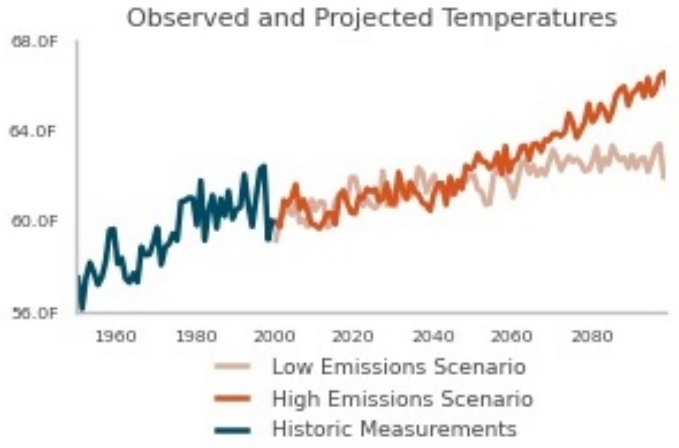
[39] Centers for Disease Control and Prevention (CDC). 2010. Department of Health and Human Services, the National Institute for Occupational Safety and Health. Carbon Dioxide. Website: www.cdc.gov/niosh/npg/npgd0103.html. Accessed February 14, 2017.

[40] Occupational Safety and Health Administration (OSHA). 2003. United States Department of Labor. Safety and Health Topics: Methane. Website: www.osha.gov/dts/chemicalsampling/data/CH_250700.html. Accessed August 21, 2016.

[41] The low and high GHG emissions scenarios are based on IPCC's Special Report on Emissions Scenarios B1 and A1, respectively. The higher global GHG emissions scenario (A1) assumes a global trend of rapid economic growth. The lower GHG emissions scenario (B1) assumes the same global population as in the A1 storyline but with rapid changes in economic structures toward a service and information economy, with reductions in material intensity, and the introduction of clean and resource-efficient technologies. Overall, the B1 scenario places more focus on global environmental sustainability rather than rapid economic growth.

[42] CalAdapt. 2018. Local Climate Snapshots. Website: http://cal-adapt.org/tools/factsheet/. Accessed July 11, 2018.

Figure 3.6-4: Observed and Projected Temperatures in Pleasant Hill



Source: CalAdapt. 2018. Local Climate Snapshots. Website: http://cal-adapt.org/tools/factsheet/. Accessed July 11, 2018.

Drought and Wildfires

The hilly, vegetated areas located west, northwest, east, and southeast of the City of Pleasant Hill are at risk for wildfires. (See Section 3.7, Hazards, Hazardous Materials, and Wildfire, for a more detailed discussion related to wildfire hazard areas and wildfire-conducive conditions.) The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in these areas.

Reduced Sierra Nevada Snowpack and Water Supply Shortages

As described in Section 3.15, Utilities and Service Systems, the City of Pleasant Hill receives potable water from four water providers: Contra Costa Water District (CCWD), East Bay Municipal Utility District, Diablo Water District, and Martinez Water District. The plan area is within the CCWD service area.[43] Originating in the Sierra Nevada Mountains, water flows into the Sacramento and San Joaquin Rivers into the Delta where it is drawn and transported via Contra Costa Canal. The availability of surface water supply could decline if climate change results in reduced snowpack in the Sierra Nevada.

Plan Area

The plan area is located within an urban area with limited vegetative fuel-load and no steep hillside conditions that are not conducive to wildfires. However, there are hilly, vegetated areas located in the vicinity of the plan area that have a higher risk for wildfires. The closest hilly, vegetated areas are located approximately 2.3 miles west of the plan area. The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in those areas as well as increased risk related to water supply shortage.

[43] Contra Costa Water District (CCWD). 2017. Contra Costa Water District: District Boundaries. Website: https://www.ccwater.com/289/Service-Area-Map. Accessed December 5, 2018.

Energy Basics

Energy is generally transmitted either in the form of electricity, measured in kilowatts (kW)[44] or megawatts (MW),[45] or natural gas measured in British thermal units (BTU), or cubic feet.[46] Fuel, such as gasoline or diesel, is measured in gallons or liters.

Electricity

Electricity is used primarily for lighting, appliances, and other uses associated with the proposed plan.

Natural Gas

Natural gas is used primarily for heating, water heating, and cooking purpose and is typically associated with commercial and residential uses.

Fuel

Fuel is used primarily for powering off-road equipment, trucks, and passenger vehicles. The typical fuel types used are diesel and gasoline.

Electricity Generation, Distribution, and Use

State of California

The State of California generates approximately 206,336 gigawatt-hours (GWh) of electricity. Approximately 43.4 percent of the energy generation is sourced from natural gas, 29.7 percent from renewable sources (i.e., solar, wind, and geothermal), 17.9 percent from large hydroelectric sources, and the remaining 9 percent is sourced from coal, nuclear, oil, and other non-renewable sources.[47]

In 2016, California ranked third in the nation in conventional hydroelectric generation, second in net electricity generation from all other renewable energy resources combined, and first as a producer of electricity from solar, geothermal, and biomass resources. California leads the nation in solar thermal electricity capacity and generation. In 2016, California generated 71 percent of the nation's solar thermal-sourced utility-scale electricity.[48]

Electricity and natural gas is distributed through the various electric load-serving entities (LSEs) in California. These entities include investor-owned utilities, publically owned LSEs, rural electric cooperatives, community choice aggregators, and electric service providers.[49]

[44] 1 kW = 1.000 watts; A watt is a derived unit of power that measure rate of energy conversion. 1 watt is equivalent to work being done at a rate of 1 joule of energy per second. In electrical terms, 1 watt is the power dissipated by a current of 1 ampere flowing across a resistance of 1 volt.

[45] 1 MW = 1 million watts

[46] A unit for quantity of heat that equals 100,000 British thermal units. A British thermal unit (BTU) is the quantity of heat required to raise the temperature of 1 pound of liquid water 1 degree Fahrenheit at a constant pressure of 1 atmosphere.

[47] State of California. 2019. California Energy Commission. Website: https://www.energy.ca.gov/almanac/electricity_data/total_system_power.html. Accessed March 1, 2019.

[48] United States Energy Information Administration. California State Profile and Energy Estimates. Website: https://www.eia.gov/state/?sid=CA. Accessed March 1, 2019.

[49] California Energy Commission. Electric Load-Serving Entities (LSEs) in California Website: https://www.energy.ca.gov/almanac/electricity_data/utilities.html. Accessed March 1, 2019.

Contra Costa County

Pacific Gas & Electricity (PG&E) provides electricity to many of the cities throughout Contra Costa County, including the City of Pleasant Hill. In addition to PG&E, Marin Clean Energy also services portions of Contra Costa County.[50]

City of Pleasant Hill

PG&E provides electrical services to customers in the City of Pleasant Hill.

Plan Area

The existing library currently utilizes electricity for lighting, appliances, and other associated uses. The library is provided electricity by PG&E. According to the California Emissions Estimator Model (CalEEMod) outputs in Appendix C, the existing library currently utilizes 516,355 kilowatt-hour (kWh) of electricity per year.

Natural Gas Generation, Distribution, and Use

State of California

Natural gas is used for everything from generating electricity to cooking and space heating to an alternative transportation fuel. In 2012, total natural gas demand in California for industrial, residential, commercial, and electric power generation was 2,313 billion cubic feet per year (BCF/year), up from 2,196 BCF/year in 2010. Demand in all sectors except electric power generation remained relatively flat for the last decade due in large part to energy efficiency measures, but demand for power generation rose about 30 percent between 2011 and 2012.

Natural gas-fired generation has become the dominant source of electricity in California, as it fuels about 43 percent of electricity consumption followed by hydroelectric power. Because natural gas is a dispatchable resource that provides load when the availability of hydroelectric power generation and/or other sources decrease, use varies greatly from year to year. The availability of hydroelectric resources, the emergence of renewable resources for electricity generation, and overall consumer demand are the variables that shape natural gas use in electric generation. Because of above average precipitation in 2011, natural gas used for electricity generation was 617 BCF, compared to lower precipitation years in 2010 and 2012 when gas use for electric generation was 736 BCF and 855 BCF, respectively.[51]

Contra Costa County

PG&E provides natural gas to many of the cities throughout Contra Costa County, including the City of Pleasant Hill.

City of Pleasant Hill

PG&E provides natural gas services to customers in the City of Pleasant Hill. PG&E's natural gas and electricity services cover approximately 70,000 square miles in Northern and Central California. The transmission and delivery system comprises 1.5 million miles of transmission pipelines and

[50] Marin Clean Energy. 2019. MCE Contra Costa. Website: https://www.mcecleanenergy.org/mce-contra-costa/. Accessed March 1, 2019.
[51] California Energy Commission. 2019. Supply and Demand of Natural Gas in California. Website: https://www.energy.ca.gov/almanac/naturalgas_data/overview.html. Accessed March 1, 2019.

distribution systems delivering natural gas to over 16 million people. Currently, PG&E has 4.3 million natural gas accounts.[52]

Plan Area

The existing library currently utilizes natural gas for heating and water heating. PG&E provides the library with natural gas. Based on the CalEEMod default values for a 37,364-square-foot library in Contra Costa County, the existing library currently utilizes 924,759 kilo-BTU of natural gas per year (Appendix C).

Fuel Use

State of California

The main category of fuel use in California is transportation fuel, specifically gasoline and diesel. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline sold in California being consumed by light-duty cars, pickup trucks, and sport utility vehicles. In 2015, 15.1 billion gallons of gasoline were sold, which represents the largest transportation fuel used in California.[53] Diesel is the second largest transportation fuel used in California. According to the State Board of Equalization, in 2015 4.2 billion gallons of diesel, including off-road diesel, was sold. Nearly all heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm, construction and heavy-duty military vehicles and equipment have diesel engines.

Plan Area

Fuel use associated with uses within plan are mainly contributed to the use of transportation fuel use—gasoline and diesel.

The existing library currently contains an operational existing library building, with associated vehicle travel. The existing library vehicle use information is based on information provided by the Transportation Impact Assessment (Appendix J). The existing library generates approximately 1,500 daily vehicle trips during the weekdays and approximately 1,270 daily trips on Saturday. Based on the estimates contained in the CalEEMod output files for the existing library, existing vehicle trips would result in approximately 2.4 million VMT on an annual basis. Based on this estimate of VMT and the fuel efficiency of the Contra Coast County fleet mix, the existing trips resulted in the consumption of approximately 104,588 gallons of gasoline and diesel combined in the 2018 operational year.[54]

[52] Pacific Gas and Electric (PG&E). Supply and Demand of Natural Gas in California. Website: https://www.pge.com/en_US/about-pge/company-information/profile/profile.page. Accessed March 1, 2019.

[53] California Energy Commission. 2019. California Gasoline, Data, Facts, and Statistics. Website: https://www.energy.ca.gov/almanac/transportation_data/gasoline/. Accessed March 1, 2019.

[54] Based on 2,430,849 annual VMT, consistent with CalEEMod output (Appendix C), and an average fuel consumption of 23.24 miles per gallon determined using EMFAC2014 factors for Contra Costa County in the 2018 calendar. Website: https://www.arb.ca.gov/emfac/2014/. Accessed March 13, 2019.

3.6.3 - Regulatory Framework

International

Kyoto Protocol

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of 5 percent against 1990 levels over the 5-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 heads of state and government, and leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business and civil society announced actions in areas that would have the greatest impact on reducing emissions, including climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

United Nations Climate Change Framework Convention

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Climate Change Framework Convention. Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Paris Climate Change Agreement

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12 in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and

to strengthen them in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties, or "COP 21." Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make "nationally determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every 5 years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation";
- Require parties engaging in international emissions trading to avoid "double counting"; and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country's NDC.[55]

On June 1, 2017, President Trump announced the decision for the United States to withdraw from the Paris Climate Accord.[56] The earliest possible effective withdrawal date by the United States cannot be before November 4, 2020. California remains committed to combating climate change through programs aimed to reduce GHGs.[57]

[55] Center for Climate and Energy Solutions (C2ES). 2015a. Outcomes of the U.N. Climate Change Conference. Website: http://www.c2es.org/international/negotiations/cop21-paris/summary. Accessed April 19, 2016.

[56] The White House. Statement by President Trump on the Paris Climate Accord. Website: https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord. Accessed June 23, 2017.

[57] California Air Resources Board (ARB). 2017. New Release: California and China Team Up to Push for Millions More Zero-emission Vehicles. Website: https://www.arb.ca.gov/newsreel/newsrelease.php?id=934. Accessed June 27, 2017.

Continental

Western Climate Initiative (Western North America Cap-and-Trade Program)

Cap-and-trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. Each emitter caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce North America GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the cap-and-trade program.[58]

Federal

Clean Air Act

Coinciding with the 2009 meeting in Copenhagen, on December 7, 2009, the United States Environmental Protection Agency (EPA) issued an Endangerment Finding under Section 202(a) of the Clean Air Act, opening the door to federal regulation of GHGs. The Endangerment Finding notes that GHGs threaten public health and welfare and are subject to regulation under the Clean Air Act. To date, the EPA has not promulgated regulations on GHG emissions, but it has already begun to develop them.

Previously the EPA had not regulated GHGs under the Clean Air Act, because it asserted that the Act did not authorize it to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. In Massachusetts v. Environmental Protection Agency et al. (127 S. Ct. 1438 (2007), however, the U.S. Supreme Court held that GHGs are pollutants under the Clean Air Act and directed the EPA to decide whether the gases endangered public health or welfare (see discussion below).

The EPA had also not moved aggressively to regulate GHGs because it expected Congress to make progress on GHG legislation, primarily from the standpoint of a cap-and-trade system. However, proposals circulated in both the House of Representative and Senate have been controversial and it may be some time before the U.S. Congress adopts major climate change legislation. The EPA's Endangerment Finding paves the way for federal regulation of GHGs with or without Congress.

U.S. Clean Air Act Permitting Programs (New GHG Source Review)

The EPA issued a final rule on May 13, 2010, that establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

[58] Center for Climate and Energy Solutions (C2ES). 2015b. Multi-State Climate Initiatives. Website: http://www.c2es.org/us-states-regions/regional-climate-initiatives. Accessed July 12, 2018.

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Energy Independence and Security Act

The Energy Policy Act of 2005 created the Renewable Fuel Standard program. The Energy Independence and Security Act of 2007 expanded this program by:

- Expanding the Renewable Fuel Standard program to include diesel in addition to gasoline;
- Increasing the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- Establishing new categories of renewable fuel, and setting separate volume requirements for each one; and
- Requiring the EPA to apply life-cycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

This expanded Renewable Fuel Standard program lays the foundation for achieving substantial reductions of GHG emissions from the use of renewable fuels, reducing the use of imported petroleum, and encouraging the development and expansion of the nation's renewable-fuels sector.

Signed on December 19, 2007, by President George W. Bush, the Energy Independence and Security Act of 2007 aims to:

- Move the United States toward greater energy independence and security;
- increase the production of clean renewable fuels;
- protect consumers;
- increase the efficiency of products, buildings, and vehicles;
- promote research on and deploy GHG capture and storage options;
- improve the energy performance of the Federal Government; and
- increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy.

The Energy Independence and Security Act reinforces the energy reduction goals for federal agencies put forth in Executive Order 13423, as well as introduces more aggressive requirements. The three key provisions enacted are the Corporate Average Fuel Economy Standards, the Renewable Fuel Standard, and the appliance/lighting efficiency standards.

The EPA is committed to developing, implementing, and revising both regulations and voluntary programs under the following subtitles in the Act, among others:

- Increased Corporate Average Fuel Economy Standards
- Federal Vehicle Fleets
- Renewable Fuel Standard
- Biofuels Infrastructure
- Carbon Capture and Sequestration[59]

EPA and National Highway Traffic Safety Administration Light-Duty Vehicle GHG Emission Standards and Corporate Average Fuel Economy Standards Final Rule

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Barack Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

The EPA and the NHTSA issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012.[60] The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleet wide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 miles per gallon (mpg) if achieved exclusively through fuel economy improvements.

[59] United States Environment Protection Agency (EPA). Summary of the Energy Independence and Security Act. Website: https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act.

[60] United States Environmental Protection Agency (EPA). 2012. EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks. Website: http://www.epa.gov/otaq/climate/documents/420f12051.pdf. Accessed August 21, 2016.

The EPA and NHTSA issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in CO_2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

The State of California has received a waiver from the EPA to have separate, stricter corporate average fuel economy standards. Although global climate change did not become an international concern until the 1980s, efforts to reduce energy consumption began in California in response to the oil crisis in the 1970s, resulting in the incidental reduction of GHG emissions. In order to manage the State's energy needs and promote energy efficiency, AB 1575 created the California Energy Commission in 1975.

Massachusetts et al. v. EPA (U.S. Supreme Court GHG Endangerment Ruling)

Massachusetts et al. v. EPA (Supreme Court Case 05-1120) was argued before the United States (U.S.) Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including CO_2, under Section 202(a)(1) of the Clean Air Act (CAA). A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the CAA. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations; and
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed under "Clean Vehicles" below. After a lengthy legal challenge, the U.S. Supreme Court declined to review an Appeals Court ruling upholding that upheld the EPA Administrator findings.

U.S. Consolidated Appropriations Act (Mandatory GHG Reporting)

The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to EPA in 2011.

State

California AB 1493: Pavley Regulations and Fuel Efficiency Standards

California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011.[61]

The standards are to be phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards will result in an approximately 22-percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards will result in about a 30-percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.[62]

The second phase of the implementation for the Pavley Bill was incorporated into Amendments to the Low-Emission Vehicle (LEV) Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.[63]

[61] California Air Resources Board (ARB). 2013d. Clean Car Standards—Pavley, Assembly Bill 1493. Website: http://www.arb.ca.gov/cc/ccms/ccms.htm. Accessed February 14, 2017.

[62] California Air Resources Board (ARB). 2013e. Facts About the Clean Cars Program. Website: http://www.arb.ca.gov/msprog/zevprog/factsheets/advanced_clean_cars_eng.pdf. Accessed February 14, 2017.

[63] California Air Resources Board (ARB). 2011c. Status of Scoping Plan Recommended Measures. Website: www.arb.ca.gov/cc/scoping plan/sp_measures_implementation_timeline.pdf. Accessed February 14, 2017.

California SB 1078: Renewable Electricity Standards

On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. The ARB Board approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23.

California Executive Order S-3-05 (GHG Emissions Reduction Targets)

Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an Executive Order, the goals are not legally enforceable for local governments or the private sector.

California AB 32: Global Warming Solutions Act and Scoping Plan

The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the State agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 MMT CO_2e on December 6, 2007.[64] Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 MMT CO_2e. Emissions in 2020 in a Business as Usual (BAU) scenario were estimated to be 596 MMT CO_2e, which do not account for reductions from AB 32 regulations.[65] At

[64] California Air Resources Board (ARB). 2007. Staff Report. California 1990 Greenhouse Gas Level and 2020 Emissions Limit. November 16, 2007. Website: www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf. Accessed February 14, 2017.

[65] California Air Resources Board (ARB). 2008. (includes edits made in 2009) Climate Change Scoping Plan, a framework for change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed February 14, 2017.

that rate, a 28 percent reduction was required to achieve the 427 MMT CO_2e 1990 inventory. In October 2010, the ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 MMT CO_2e. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels.[66]

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is shown in updated emission inventories prepared by the ARB for 2000 through 2012 to show progress achieved to date.[67] The State has also achieved the Executive Order S-3-05 target for 2010 of reducing GHG emissions to 2000 levels. As shown below, the 2010 emission inventory achieved this target. Also shown are the average reductions needed from all statewide sources (including all existing sources) to reduce GHG emissions back to 1990 levels.

- **1990:** 427 MMT CO_2e (AB 32 2020 Target)
- **2000:** 463 MMT CO_2e (an average 8-percent reduction needed to achieve 1990 base)
- **2010:** 450 MMT CO_2e (an average 5-percent reduction needed to achieve 1990 base)
- **2020:** 545 MMT CO_2e BAU (an average 21.7-percent reduction from BAU needed to achieve 1990 base)

The ARB Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32.[68] The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and

[66] California Air Resources Board (ARB). 2010a. 2020 Greenhouse Gas Emissions Projection and BAU Scenario Emissions Estimate. Website: http://www.arb.ca.gov/cc/inventory/archive/captrade_2010_projection.pdf. Accessed February 14, 2017.

[67] California Air Resources Board (ARB). 2014a. California Greenhouse Gas Emissions for 2000 to 2012—Trends of Emissions and Other Indicators. Website: http://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-12_report.pdf. Accessed April 25, 2016.

[68] California Air Resources Board (ARB). 2008 (includes edits made in 2009). Climate Change Scoping Plan, a framework for change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed February 14, 2017.

- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions.[69]

The ARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update identifies the next steps for California's climate change strategy. The Update shows how California continues on its path to meet the near-term 2020 GHG limit, but also sets a path toward long-term, deep GHG emission reductions. The report establishes a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The Update identifies progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities Climate for the next several years. The Update does not set new targets for the State, but describes a path that would achieve the long term 2050 goal of Executive Order S-05-03 for emissions to decline to 80 percent below 1990 levels by 2050.

AB 32 does not give the ARB a legislative mandate to set a target beyond the 2020 target from AB 32 or to adopt additional regulations to achieve a post-2020 target. The Update estimates that reductions averaging 5.2 percent per year would be required after 2020 to achieve the 2050 goal. With no estimate of future reduction commitments from the State, identifying a feasible strategy including plans and measures to be adopted by local agencies is not currently possible.[70]

The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a Statewide limit on sources responsible for 85 percent of California's GHG emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's cap-and-trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015.[71]

[69] California Air Resources Board (ARB). 2008 (includes edits made in 2009). Climate Change Scoping Plan, a framework for change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

[70] California Air Resources Board (ARB). 2014b. First Update to the Climate Change Scoping Plan. Website: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

[71] California Air Resources Board (ARB). 2015. ARB Emissions Trading Program. Website: http://www.arb.ca.gov/cc/capandtrade/guidance/cap_trade_overview.pdf. Accessed February 14, 2017.

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 Statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are only guaranteed on an accumulative basis. As summarized by ARB in the First Update:

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative.[72]

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures.[73]

[72] California Air Resources Board (ARB). 2014b. First Update to the Climate Change Scoping Plan. Website: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm. Accessed February 14, 2017.

[73] California Air Resources Board (ARB). 2014b. First Update to the Climate Change Scoping Plan. Website: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm. Accessed February 14, 2017.

California SB 375: Sustainable Communities and Climate Protection Act

SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning the California Environmental Quality Act (CEQA), SB 375, as codified in Public Resources Code Section 21159.28, states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if a project:

1. Is in an area with an approved sustainable communities strategy or an alternative planning strategy that the ARB accepts as achieving the GHG emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

California SB 1368: Emission Performance Standards

In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs CO_2 per megawatt-hour (MWh).

California Executive Order S-01-07: Low Carbon Fuel Standard

The Governor signed Executive Order S 01-07 on January 18, 2007. The Executive Order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the Executive Order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California,

and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to the ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, on August 8, 2013, the Fifth District Court of Appeal (California) ruled that the ARB failed to comply with CEQA and the Administrative Procedure Act when adopting regulations for Low Carbon Fuel Standards. In a partially published opinion, the Court of Appeal directed that Resolution 09-31 and two Executive Orders of the ARB approving LCFS regulations promulgated to reduce GHG emissions be set aside. However, the court tailored its remedy to protect the public interest by allowing the LCFS regulations to remain operative while the ARB complies with the procedural requirements it failed to satisfy.

To address the Court ruling, the ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The second public hearing for the new LCFS regulation was held on September 24, 2015 and September 25, 2015, where the LCFS Regulation was adopted. The Final Rulemaking Package adopting the regulation was filed with the Office of Administrative Law (OAL) on October 2, 2015. The OAL approved the regulation on November 16, 2015.[74]

California Executive Order S-13-08

Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy was adopted, which is the ". . . first Statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

California SBX 7-7: Water Conservation Act

This 2009 legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

[74] California Air Resources Board (ARB). 2015e. Low Carbon Fuel Standard Regulation. Website: http://www.arb.ca.gov/regact/2015/lcfs2015/lcfs2015.htm. Accessed September 22, 2017.

California SB 97 and the CEQA Guidelines Update

Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code, which provided an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010.

The 2010 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting;
- Whether a project emissions exceed a threshold of significance that the lead agency determines applies to the project; or
- The extent to which a project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate a project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for a project.

The CEQA Guidelines Amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, they call for a "good-faith effort, based on available information, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project." The Amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The Amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

Also amended were CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts, respectively. GHG mitigation measures are referenced in general terms, but no specific measures are championed. The revision to the cumulative impact discussion requirement (CEQA Guidelines § 15130) simply directs agencies to analyze GHG emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable; however, it does not answer the question of when emissions are cumulatively considerable.

Section 15183.5 permits programmatic GHG analysis and later project-specific tiering, as well as the preparation of GHG Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to Section 15183.5(b).

In addition, the 2010 CEQA Amendments revised Appendix F of the CEQA Guidelines, which focuses on Energy Conservation. The sample environmental checklist in CEQA Guidelines Appendix G was amended to include GHG questions. The most recent sample environmental checklist in Appendix G was further amended in 2018 to include two energy questions.

CEQA emphasizes that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (CEQA Guidelines § 15130(f)).

Center for Biological Diversity v. California Department of Fish and Wildlife (California Supreme Court GHG Ruling)

In a November 30, 2015 ruling, the California Supreme Court in *Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife* on the Newhall Ranch project concluded that whether the project was consistent with meeting Statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25–27 of the ruling to address this issue summarized below:

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU**. A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25).
- **Compliance with Regulatory Programs or Performance Based Standards**. A lead agency "might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].)" To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions' (CEQA Guidelines §

15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions']) (p. 26).

- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs)**. A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or GHG emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).
- **Compliance with Local Air District Thresholds**. A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (p. 27).

Therefore, consistent with 2019 CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if a project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the applicable GHG Reduction Threshold; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of GHGs.

California SB 350: Clean Energy and Pollution Reduction Act

In 2015, the State legislature approved and the Governor signed SB 350, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the Renewables Portfolio Standard, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum Statewide were removed from the Bill due to opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce Statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission, the California Energy Commission, and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electrify transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.[75]

[75] California Legislative Information (California Leginfo). 2015. Senate Bill 350 Clean Energy and Pollution Reduction Act of 2015. Website: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350. Accessed September 28, 2017.

California Executive Order B-30-15

On April 29, 2015, an Executive Order was issued by the Governor to establish a California GHG emissions reduction target of 40 percent below 1990 levels by 2030. The Governor's Executive Order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The Executive Order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MM CO_2e. The Executive Order also requires the State's climate adaptation plan to be updated every 3 years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this Executive Order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to make post 2020 targets and requirements a mandate is in process in the State Legislature.

California Senate Bill 32

The Governor signed SB 32 in September of 2016, giving the ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
   - Achieve 50 percent Renewables Portfolio Standard by 2030.
   - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard
   - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
   - Maintaining existing GHG standards for light- and heavy-duty vehicles.
   - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
   - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
   - Improve freight system efficiency.
   - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
   - Deploy over 100,000 zero-emission trucks and equipment by 2030.

5. Short-Lived Climate Pollutant (SLCP) Reduction Strategy
   - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
   - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
6. SB 375 Sustainable Communities Strategies
   - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
   - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
   - The ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.
8. 20 percent reduction in GHG emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

California Code of Regulations Title 13: Motor Vehicles

California Code of Regulations, Title 13: Division 3, Chapter 10, Article 1, Section 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.[76] This measure seeks to reduce public exposure to diesel particulate matter and other air contaminants by establishing idling restrictions, emission standards, and other requirements for heavy-duty diesel engines and alternative idle reduction technologies to limit the idling of diesel-fueled commercial motor vehicles. Any person that owns, operates, or causes to operate any diesel-fueled commercial motor vehicle must not allow a vehicle to idle for more than 5 consecutive minutes at any location, or operate a diesel-fueled auxiliary power system for greater than 5 minutes at any location when within 100 feet of a restricted area.

California Code of Regulations, Title 13: Division 3, Chapter 9, Article 4.8, Section 2449: General Requirements for In-Use Off-Road Diesel-Fueled Fleets. This measure regulates NO_X, diesel particulate matter (DPM), and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles. This measure also requires each fleet to meet fleet average requirements, or demonstrate that it has met "best available control technology" requirements. Additionally, this measure requires medium and large fleets to have a written idling policy that is made available to operators of the vehicles informing them that idling is limited to five consecutive minutes or less.

[76] Thomas Reuters Westlaw. 2019. California Code of Regulations, Title 13. Motor Vehicles. Website: https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I143B9530D46811DE8879F88E8B0DAAAE&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default). Accessed February 27, 2019.

California Code of Regulations Title 20: Appliance Efficiency Regulations

California Code of Regulations, Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.[77]

California Code of Regulations Title 24: Energy Efficiency Standards

California Code of Regulations, Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards went into effect on January 1, 2017.[78] The 2019 Building Energy Efficiency Standards are scheduled to go into effect on January 1, 2020. One of the notable changes in the 2019 Title 24 Standards includes the solar photovoltaic systems requirement for new low-rise residential homes.

California Code of Regulations Title 24: California Green Building Standards Code

California Code of Regulations, Title 24, Part 11, is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Standards Code (CALGreen) that became effective January 1, 2017.[79] Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance, so long as they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

California Energy Regulations

Title 24, Part 6, of the California Code of Regulations is the California Building Standards Code, which governs all aspects of building construction. Included in Part 6 of the Code are standards mandating energy efficiency measures in new construction. Since its establishment in 1977, the building efficiency standards (along with standards for energy efficiency in appliances) have contributed to a

[77] California Energy Commission. 2012. 2013 Title 24 Building Energy Efficiency Standards Adoption Hearing Presentation. Website: http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/final_rulemaking_documents/31_2013_Adoption_Hearing_Presentation_5-31.pdf. Accessed October 19, 2015.

[78] California Energy Commission. 2016. 2016 Building Energy Efficiency Standards Frequently Asked Questions. Website: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf. Accessed December 1, 2016.

[79] California Building Standards Commission (CBSC). 2016. Green Building Standards. Website: https://www.ladbs.org/docs/default-source/publications/code-amendments/2016-calgreen_complete.pdf?sfvrsn=6. Accessed June 27, 2017.

reduction in electricity and natural gas usage and costs in California. The standards are updated every three years to incorporate new energy efficiency technologies. The latest update to the Title 24 standards became effective on January 1, 2017. The standards regulate energy consumed in buildings for heating, cooling, ventilation, water heating, and lighting. Title 24 is implemented through the local planning and permit process.

California Model Water Efficient Landscape Ordinance

The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for Ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed the Department of Water Resources to update the Ordinance through expedited regulation. The California Water Commission approved the revised Ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the Ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

California Green Building Standards Code

The Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations [CCR] Title 24, Part 6) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technology and methods. The most recent update of standards became effective in January 1, 2017. The Energy Commission staff has estimated that the implementation of the 2016 Building Energy Efficiency Standards may reduce Statewide annual electricity consumption by approximately 281 gigawatt-hours per year and reduce GHG emissions by 160,000 MT CO_2e per year.[80]

California Public Utilities Code

The CPUC regulates privately owned telecommunication, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. It is the responsibility of the CPUC to (1) assure California utility customers receive safe and reliable utility service at reasonable rates; (2) protect utility customers from fraud; and (3) promote a healthy California economy. The Public Utilities Code, adopted by the legislature, defines the jurisdiction of the CPUC.

[80] California Energy Commission. 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. Website: https://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf

Local

Contra Costa County General Plan

Contra Costa County has land use authority for the unincorporated areas of Contra Costa County; however, regional goals and policies may co-benefit the incorporated cities within Contract Costa County. Contra Costa County has renewable energy sources, in the form of wind energy and solar power, which have yet to be fully utilized. Chapter 8, the Conservation Element, of the Contra Costa County General Plan contains the following goals and policies pertaining to the County's renewable energy resources.[81]

- **Goal 8-K:** To encourage the use of renewable resources where they are compatible with the maintenance of environmental quality.
- **Goal 8-L:** To reduce energy use in the County to avoid risks of air pollution and energy shortages which could prevent orderly development.

Contra Costa County Climate Action Plan

In 2005, Contra Costa County established a Climate Change Working Group to coordinate County efforts to respond to climate change, and to guide practices that result in more sustainable actions. On December 15, 2015, the Contra Costa County CAP was approved by the Board of Supervisors. The CAP identifies specific measures on how the County can achieve a GHG reduction target of 15 percent below baseline levels by the year 2020.[82] The Contra Costa County CAP only applies to unincorporated areas of Contra Costa County; however, regional goals and policies may co-benefit the incorporated cities within Contract Costa County. Many County policies and initiatives support this CAP, including:

- The Contra Costa County Municipal Climate Action Plan,[83] which includes a range of policies promoting energy efficiency and renewable energy;
- Bay Area Regional Energy Network,[84] a collaboration of the nine counties that make up the Bay Area that implements energy savings programs on a regional level;
- Energy conservation policies and programs designed to reduce energy demand through home weatherization programs and green building guidelines; and
- Alternative energy policies that will reduce GHG emissions through supporting appropriate renewable energy projects and encouraging energy recovery projects.

Pleasant Hill 2003 General Plan

The Pleasant Hill 2003 General Plan[85] contains goals and policies relevant to the GHG emissions, including goals and policies related to energy efficiency. Specifically related to energy efficiency, the

[81] Contra Costa County General Plan. 2005. January 18. Website: http://www.co.contra-costa.ca.us/4732/General-Plan. Accessed February 26, 2019.
[82] Contra Costa County. 2015. Contra Costa County Climate Action Plan. December 15. Website: http://www.co.contracosta.ca.us/4554/Climate-Action-Plan. Accessed February 25, 2019.
[83] Contra Costa County. 2008. Contra Costa County Municipal Climate Action Plan. December. Website: www.co.contra-costa.ca.us/DocumentCenter/View/2905. Accessed February 27, 2019.
[84] Association of Bay Area Governments (ABAG). 2019. BayRen [Bay Area Regional Energy Network]: Local Governments Empowering Our Communities. Website: https://www.bayren.org/. Accessed February 27, 2019.
[85] City of Pleasant Hill. 2003. Pleasant Hill 2003 General Plan. July 21. Website: https://www.ci.pleasant-hill.ca.us/132/Current-General-Plan. Accessed February 27, 2019.

Community Development Policy 23A gives priority to development that incorporates energy-efficient and resource-conserving design and construction. The associated Community Development Programs promote energy efficiency and conservation through various initiatives, including designing new buildings to exceed State standards for energy efficiency and developing architectural review guidelines that include the latest and best available energy-efficiency techniques and technology. The Pleasant Hill 2003 General Plan also includes Housing Goal 8, requiring energy conserving practices in the maintenance of existing dwellings and in new residential development, additions and remodeling.

Additional goals and policies that are established by the Pleasant Hill 2003 General Plan and are relevant to GHG emissions include, but are not limited to, the following:

Circulation Element[86]

- **Goal 6.** Reduce congestion and vehicle trips through non-automobile transportation and public transit.
- **Policy 6A.** Encourage use of bus and rail service for local and regional travel.
- **Policy 6B.** Encourage use of carpooling and ridesharing for local and regional travel.
- **Program 6.1.** Consider development of a transportation demand management program for areas of the City with high employment concentration.
- **Program 6.2.** Improve accessibility to transit.
- **Program 6.4.** Provide adequate pedestrian, bicycle and disabled access to and from transit stops.
- **Program 6.6.** Support County Connection to improve all types of accessibility for their facilities and to incorporate intermodal facilities where feasible.
- **Program 6.7.** Support new technologies that promote more effective use of transit and facilitate other innovative alternative modes of transportation.
- **Program 6.8.** Explore incentives for public employees to not commute by automobile.
- **Program 6.9.** Expand use of transit for seniors, students, and persons with disabilities.
- **Program 6.10.** Work with employers, schools, and developers to encourage ridesharing and transit use.
- **Program 6.11.** Work with employers, schools, and developers to encourage innovative transportation measures.
- **Program 6.12.** Encourage development of infrastructure (public and private) to support the use of electric and other alternative fuel vehicles.
- **Goal 7.** Ensure that streets are safe and pedestrian-friendly.
- **Policy 7A.** Maintain and upgrade the City's bikeway system.
- **Program 7.3.** Develop bicycle routes that provide connectivity between homes, job centers, schools and other frequently visited destinations.

Pleasant Hill Municipal Code

The Pleasant Hill Municipal Code[87] contains ordinances relevant to the GHG emissions, many of which are specifically related to energy efficiency. Chapter 14.05, California Building Standards

[86] City of Pleasant Hill. 2015. Pleasant Hill 2003 General Plan—Circulation Element (Updated April 2015). Website: https://www.ci.pleasant-hill.ca.us/132/Current-General-Plan. Accessed March 6, 2019.

[87] City of Pleasant Hill. 2019. Pleasant Hill Municipal Code. Website: https://www.codepublishing.com/CA/PleasantHill/. Accessed February 27, 2019.

Code, adopts California Code of Regulations, Title 24, as detailed above. Chapter 14.60, Residential Weatherization Disclosure, encourages voluntary weatherization of residential dwellings by requiring sellers of residential dwellings provide prospective buyers with information on the existence of specific energy-saving weatherization devices within such dwellings. Chapter 18.52, Water-Efficient Landscaping, includes regulations to ensure that landscaping projects within the City are designed and developed to use water in an efficient manner. Chapter 18.52 is the applicable water-efficient landscape ordinance for the plan area and is at least as effective as the updated 2015 State Model Water Efficient Landscape Ordinance described above.

3.6.4 - Impacts and Mitigation Measures

Significance Criteria

According 2019 CEQA Guidelines Appendix G, to determine whether impacts related to GHG emissions and energy are significant environmental effects, the following questions are analyzed and evaluated.

Would the proposed plan:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

c) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during construction or operation of the proposed plan?

d) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Approach to Analysis

GHG Emissions Generation Calculation Methodology

The emission estimates were developed consistent with the proposed land uses and construction schedule described in Chapter 2, Project Descriptions. The CalEEMod version 2016.3.2 was used to estimate the Civic Project's and Residential Project's construction and operation-related GHG emissions. CalEEMod was developed in cooperation with air districts throughout the State and is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential GHG emissions associated with construction and operation from a variety of land uses.

Construction

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction-related GHG emissions result from on-site and off-site activities. On-site GHG emissions principally consist of exhaust emissions from heavy-duty construction equipment. Off-site GHG emissions would occur from motor vehicle exhaust from material delivery vehicles and construction worker traffic. However, unlike air quality emissions that have both localized and regional impacts, GHG emissions are evaluated based on

the total emissions generated. The construction parameters used to estimate construction-related GHG emissions were based on data provided by the project sponsors and CalEEMod default-provided assumptions and are consistent with the assumptions described in Section 3.2, Air Quality. Full assumptions are detailed in the CalEEMod modeling output contained in Appendix C.

The analysis presents a conservative estimate, which assumes that some of the construction of the Civic Project and Residential Project would overlap.

Operation

Operational GHG emissions are those GHG emissions that occur during operation of the proposed plan. To ensure a conservative analysis, operational emissions were analyzed assuming full buildout of the Civic Project and Residential Project in 2021, consistent with the conceptual schedule presented in Table 3.2-9 in Section 3.2, Air Quality.

The major sources and operational parameters used to estimate operation-related GHG emissions are summarized below. Full assumptions are detailed in the CalEEMod modeling output contained in Appendix C.

Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the plan area. The emissions were estimated using CalEEMod. The weekday and Saturday trip generation rates for operations associated with the Civic Project and Residential Project were obtained from the transportation impact assessment (included in Appendix J).[88] As Sunday trips were not explicitly stated in the transportation impact assessment, Saturday trip generation rates were applied to both Saturday and Sunday trips.

Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from traffic passing the plan area on an adjacent street or roadway that offers direct access to the generator. Pass-by trips are not diverted from another roadway. The CalEEMod defaults pass-by trips were used for this analysis.

The CalEEMod default round trip lengths for an urban setting for Contra Costa County were used in this analysis. The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the Civic Project and Residential Project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet mix for Contra Costa County was used for this analysis.

Landscape Equipment

The use of landscaping equipment (leaf blowers, chain saws, mowers) would generate GHG emissions as a result of fuel combustion based on assumptions in CalEEMod.

Electricity

The City of Pleasant Hill is served by PG&E. For the purpose of estimating GHG emissions for this analysis, emission factors from PG&E were used. PG&E provides estimates of its emission factor per

[88] Fehr & Peers. 2019. Final Transportation Impact Assessment, prepared for City of Pleasant Hill. January.

megawatt hour of electricity delivered to its customers. PG&E emissions factor for 2020 for CO_2 is provided below. The rates for methane and nitrous oxide are based on compliance with the Renewable Portfolio Standard. The factors listed below were applied in estimating emissions for the year 2021.

- **Carbon dioxide:** 491.65 lb/MWh
- **Methane:** 0.022 lb/MWh
- **Nitrous oxide:** 0.005 lb/MWh

SB 350 requires an increase in the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030. Therefore, the adjusted PG&E CalEEMod emission factors are shown below for the year 2030.

- **Carbon dioxide:** 366.91 pound per megawatt hour (lb/MWh)
- **Methane:** 0.029 lb/MWh
- **Nitrous oxide:** 0.006 lb/MWh

CalEEMod has three categories for electricity consumption: Title 24-electricity; non-Title 24-electricity; and lighting. Title 24-electricity uses are defined as the major building envelope systems covered by California's Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. Lighting is separate since it can be both part and not part of Title 24. Since lighting is not part of the building envelope energy budget, CalEEMod does not consider lighting to have any further association with Title 24 references in the program. Non-Title 24-electricity includes everything else such as appliances and electronics. To properly divide the total electricity consumption into the three categories, the percentage for each category is determined by using percentages derived from the CalEEMod default electricity intensity. The percentages are applied to the electricity consumption to obtain the values used in the analysis.

Natural Gas

There would be emissions from the combustion of natural gas used for the Civic Project and Residential Project (water heaters, heat, etc.). CalEEMod has two categories for natural gas consumption: Title 24-natural gas, and non-Title 24-natural gas. For purposes of this analysis, CalEEMod defaults were used.

Water and Wastewater

GHG emissions are emitted from the use of electricity to pump water to the plan area and to treat wastewater. CalEEMod default values were used in the analysis.

Solid Waste

GHG emissions would be generated from the decomposition of solid waste generated by the Civic Project and Residential Project. CalEEMod was used to estimate the GHG emissions from this source. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture—6 percent;
- Landfill capture gas flare—94 percent;
- Landfill capture gas energy recovery—0 percent.

Vegetation

There is currently carbon sequestration occurring on-site from existing vegetation. The proposed plan would include the planting of trees and would integrate landscaping into the design, which would provide carbon sequestration. For purposes of this analysis, it was assumed that the loss and addition of carbon sequestration would be balanced; therefore, emissions due to carbon sequestration were not included.

Life Cycle Emissions

An upstream GHG emissions source (also known as life cycle emissions) refers to emissions that are generated during the manufacturing and transportation of products that would be utilized for construction. Upstream emission sources for construction include but are not limited to GHG emissions from the manufacturing of cement and steel as well as from the transportation of building materials to the seller of such products. The upstream emissions associated with implementation of the proposed plan are difficult to estimate because (1) upstream emissions are not within the control of the proposed plan and (2) the information is not readily available. Therefore, to characterize these emissions would be speculative, and upstream emissions associated with construction have not been estimated as part of this impact analysis. Additionally, the California Air Pollution Control Officers Association (CAPCOA) White Paper on CEQA and Climate Change supports this approach by stating, "The full life-cycle of GHG emissions from construction activities is not accounted for . . . and the information needed to characterize [life-cycle emissions] would be speculative at the CEQA analysis level."[89] Therefore, pursuant to CEQA Guidelines Sections 15144 and 15145, upstream/life cycle emissions are speculative, and is not further discussed as part of this impact analysis.

GHG Emissions Reduction Plan Consistency Determination Methodology

In determining whether a project or plan conflicts with any applicable plan, policy, or regulation, the California Natural Resources Agency has stated that in order to be used for the purpose of determining significance, an applicable plan, policy, or regulation must contain specific requirements that result in reductions of GHG emissions to a less than significant level. The proposed plan is assessed for its consistency with the ARB's adopted AB 32 Scoping Plan and the ARB's adopted 2017 Climate Change Scoping Plan Update. Consistency would be achieved with an assessment of the proposed plan's compliance with applicable Scoping Plan measures.

Energy Consumption Methodology

For the purposes of this EIR, the approach to analysis for energy use is based on 2019 CEQA Guidelines Appendix F (Energy Conservation). CEQA Guidelines Appendix F is focused on the goal of conserving energy through the wise and efficient use of energy. The anticipated electricity and natural gas consumption associated with the Civic Project and Residential Project were estimated using default CalEEMod assumptions. CalEEMod contains default energy intensity rates for the various land uses selected.

[89] California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA and Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. Website: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White- Paper.pdf. Accessed December 18, 2011.

Renewable Energy/Energy Efficiency Plan Consistency Determination Methodology

The proposed plan would be determined to conflict with or obstruct a State or local plan for renewable energy or energy efficiency if it would not adhere to the energy use reduction measures included in CALGreen or required by the City of Pleasant Hill during construction or operational activities.

Specific Thresholds of Significance

GHG Emissions Generation

The City of Pleasant Hill utilizes BAAQMD's quantitative thresholds for evaluation of GHG emissions. The BAAQMD provides multiple options in its 2017 BAAQMD CEQA Guidelines for operational GHG emissions generation significance thresholds. However, at the time of this analysis, the BAAQMD has not yet provided a construction-related GHG emissions generation significance threshold, but it does recommend that construction-generated GHGs be quantified and disclosed.

Because details for both the Civic Project and Residential Project were available at the time of analysis, the BAAQMD's project-level significance threshold for operational GHG generation was deemed appropriate to use when determining the proposed plan's potential GHG impacts. The thresholds suggested by the BAAQMD are as follows:

- Compliance with a qualified GHG Reduction Strategy, or
- 1,100 MT CO_2e per year, or
- 4.6 MT CO_2e per service population (employees plus residents) per year.

It should be noted that the BAAQMD's thresholds of significance was established based on meeting the 2020 GHG targets set forth in the AB 32 Scoping Plan. For developments that would occur beyond 2020, the mass emissions or bright-line threshold of significance (1,100 MT CO_2e/year) was adjusted to a "substantial progress" threshold that was calculated based on the SB 32 target of 40 percent below 1990 levels.[90] Since the 2020 GHG targets set forth in the AB 32 Scoping Plan are to meet 1990 levels, it follows that the threshold of 1,100 MT CO_2e/year must decrease by 40 percent by 2030 to meet statewide 2030 GHG targets. To determine potential significance, the proposed plan's net GHG emissions are assessed against the threshold of 1,100 MT CO_2e/year for the operational year of 2021 and are compared to the adjusted threshold of 660 for the operational year of 2030.

GHG Emissions Reduction Plan Consistency

The proposed plan would be determined to conflict with any applicable GHG emissions reduction plan if it would not adhere to applicable GHG reduction measures included in:

- AB 32 (the ARB-adopted Scoping Plan); or
- SB 32 (the ARB-adopted 2017 Climate Change Scoping Plan Update).

[90] Association of Environmental Professionals (AEP). Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California. Website: https://www.califaep.org/images/climate-change/AEP-2016_Final_White_Paper.pdf. Accessed December 20, 2018.

Energy

The City of Pleasant Hill does not have quantitative thresholds for evaluation of energy; however, the following qualitative thresholds are used to evaluate the significance of energy impacts resulting from implementation of the proposed plan if it would:

- Result in a wasteful, inefficient, and unnecessary consumption of energy during construction and operational activities; or if
- Construction and operation of buildings and appliances would not adhere to the energy-use reduction measures included in CALGreen and required by the City of Pleasant Hill.

Impact Evaluation

GHG Emissions Generation

Impact GHG-1:	**Implementation of the proposed plan would generate direct and indirect greenhouse gas emissions that could result in a significant impact on the environment.**

This GHG emissions generation analysis is restricted to emissions of the GHGs identified as those of California concern by AB 32, which include CO_2, methane, nitrous oxide, HFC, PFC, and SF_6. The proposed plan would generate a variety of GHG emissions during construction and operation, including several defined by AB 32 such as CO_2, methane, nitrous oxide, and HFCs. Certain GHGs defined by AB 32 would not be generated by the Civic Project or Residential Project such as PFCs and SF_6. As such, CO_2e emissions discussed below are limited to a combination of emissions of CO_2, methane, nitrous oxide, HFC, PFC, and SF_6.

Construction

Civic Project and Residential Project

Construction of the Civic Project and Residential Project would emit GHG emissions during construction from the off-road construction equipment, worker vehicles, and any hauling that may occur. Total GHG emissions generated during all construction activities were quantified and combined and are presented in Table 3.6-5. In order to assess the construction emissions, the total emissions generated during construction were amortized based on the life of the development (30 years) and added to the operational emissions. Construction of the Civic Project and Residential Project is estimated to generate approximately 1,350 MT CO_2e per year over the duration of construction, which would result in approximately 45 MT CO_2e per year when amortized over 30 years. The amortized emissions from construction were added to the operational emissions to determine the total emissions. These total emissions were analyzed against the 2020 BAAQMD mass emissions threshold of 1,100 MT CO_2e/year and the projected mass emissions threshold of 660 CO_2e/year. The schedule shown in Table 3.6-5 presents a conservative estimate, which assumes that some of the construction of the Civic Project and Residential Project would overlap.

Table 3.6-5: Unmitigated Proposed Plan Construction GHG Emissions

Construction Activity	Total Emissions (MT CO_2e/year)
Demolition Phase of Construction	
Demolition	98
Phase I Construction	
Site Preparation—2019	214
Site Preparation—2020	92
Paving	8
Grading	271
Phase II Construction	
Paving	28
Building Construction—2020	344
Building Construction—2021	185
Architectural Coating	10
Phase III	
Site Preparation	10
Building Construction	46
Architectural Coating	5
Paving	38
All Construction Activities (2019-2021)	
Total Construction Emissions	**1,350**
Construction Emissions Amortized Over the Life of the Proposed Plan (30 years)	**45**
Note: Calculations use unrounded numbers. Source: CalEEMod Output (see Appendix C).	

As shown in Table 3.6-5 construction of the Civic Project and Residential Project would generate approximately 1,350 MT CO_2e, which is approximately 45 MT CO_2e per year when amortized over 30 years.

Operation

Civic Project and Residential Project

Operational or long-term emissions occur over the life of a project. The operational GHG emissions are combined with the amortized construction emissions and compared with the BAAQMD's per-service-population threshold to make a significance determination. Major sources for operational

emissions are summarized below, and are described in more detail above under the Approach for Analysis. Sources for operational emissions include:

- **Motor Vehicles:** These emissions refer to GHG emissions contained in the exhaust from the cars and trucks that would travel to and from the plan area.
- **Natural Gas:** These emissions refer to the GHG emissions that occur when natural gas is burned within the plan area. Natural gas uses could include heating water, space heating, dryers, stoves, or other uses.
- **Indirect Electricity:** These emissions refer to those generated by off-site power plants to supply electricity required for the proposed plan.
- **Water Transport:** These emissions refer to those generated by the electricity required to transport and treat the water to be used by the Civic Project and Residential Project.
- **Waste:** These emissions refer to the GHG emissions produced by decomposing waste generated by the Civic Project and Residential Project.

Operational GHG emissions by source are shown in Table 3.6-6. As previously indicated, the analysis includes construction emissions amortized over the life of the Civic Project and Residential Project. The Civic Project and Residential Project would generate approximately 2,320 MT CO_2e with the addition of amortized construction emissions. As noted in Table 3.6-4 and Table 3.6-6, the existing library is estimated to generate approximately 1,133 MT CO_2e/year, which is credited against the estimated future emissions. The estimated total annual net emissions that would be generated by the Civic Project and Residential Project, including operational emissions and amortized construction emissions, were compared with the BAAQMD threshold of 1,100 MT CO_2e/year to determine significance at buildout in the year 2021. The estimated total annual GHG emissions in the year 2030 were compared with the applicable threshold of 660 MT CO_2e/year.

Table 3.6-6: Unmitigated Proposed Plan Operational GHG Emissions

Emission Source	Year 2021 Total Emissions (MT CO_2e per year)	Year 2030 Total Emissions (MT CO_2e per year)
Area	3	3
Energy	234	205
Mobile	2,001	1,545
Waste	23	23
Water	13	10
Amortized Construction Emissions	45	45
Total Proposed Plan Emissions	*2,320*	*1,832*
Existing Emissions	(1,133)	(1,133)
Annual Net Proposed Plan Emissions	**1,186**	**699**
Applicable BAAQMD Threshold (MT CO_2e/year)	**1,100**	**660**[1]

Table 3.6-6 (cont.): Unmitigated Proposed Plan Operational GHG Emissions

Emission Source	Year 2021 Total Emissions (MT CO_2e per year)	Year 2030 Total Emissions (MT CO_2e per year)
Does Proposed Plan exceed threshold?	**Yes**	**Yes**

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent.
Unrounded results used to calculate totals.
[1] Adjusted threshold to account for 2017 Scoping Plan Update 40% Reduction Goal by 2030
Source of Emissions: CalEEMod Output (Appendix C).

As shown in Table 3.6-6, the implementation of the proposed plan would slightly exceed the BAAQMD's threshold of 1,100 MT CO_2e/year at buildout and would slightly exceed the projected 660 MT CO_2e/year for the 2030 GHG emissions. This represents a potentially significant impact.

Mitigation Measure (MM) GHG-1 would reduce GHG emissions to less than significant levels, through the option to purchase offsets or implementing other feasible measures listed in MM GHG-1. The Civic Project and Residential Project could achieve the equivalent of net zero electricity use through a combination of on-site generation or through the purchase of renewable electricity from the utility provider. PG&E offers the ability to purchase 100 percent renewable energy through the "Solar Choice" program. Achieving net zero electricity use equivalence would reduce emissions by 116 MT CO_2e in the 2021 operational year and 87 MT CO_2e in the 2030 operational year.

Because the Civic Project would account for 65 percent of the total trips associated with the proposed plan, the Civic Project sponsors are responsible for 65 percent of the reduction in MT CO_2e, or a reduction of 56 MT CO_2e per year in 2021 and a reduction of 25 MT CO_2e per year in 2030.

Because the Residential Project would account for 35 percent of the total trips associated with proposed plan, the Residential Project sponsors are responsible for 35 percent of the reduction in MT CO_2e, or a reduction of 30 MT CO_2e per year in 2021 and a reduction of 14 MT CO_2e per year in 2030.

Table 3.6-7 shows the total operational GHG emissions with the use of renewable-energy-sourced electricity and implementation of a ridesharing program for as provided in MM GHG-1. As shown in Table 3.6-7, with mitigation incorporated, the GHG operational emissions during operation would not exceed applicable thresholds of significance in 2021 and 2030.

Table 3.6-7: Mitigated Proposed Plan Operational GHG Emissions

Emission Source	Year 2021 Total Emissions (MT CO_2e per year)	Year 2030 Total Emissions (MT CO_2e per year)
Area	3	3
Energy	118	118
Mobile	1,923	1,485
Waste	23	23

Table 3.6-7 (cont.): Mitigated Proposed Plan Operational GHG Emissions

Emission Source	Year 2021 Total Emissions (MT CO_2e per year)	Year 2030 Total Emissions (MT CO_2e per year)
Water	13	10
Amortized Construction Emissions	45	45
Total Proposed Plan Emissions	*2,125*	*1,684*
Existing Emissions	(1,133)	(1,133)
Annual Net Mitigated Proposed Plan Emissions	**992**	**551**
Applicable BAAQMD Threshold (MT CO_2e/year)	**1,100**	**660**[1]
Does Proposed Plan exceed threshold?	**No**	**No**

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent.
Unrounded results used to calculate totals.
[1] Adjusted threshold to account for 2017 Scoping Plan Update 40% Reduction Goal by 2030
Source of Emissions: CalEEMod Output (Appendix C).

Level of Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Mitigation Measures

MM GHG-1 Implement and Document Annual GHG Emissions Reduction Measures

Civic Project: Prior to the issuance of the certificate of occupancy, the contractor for the Civic Project shall provide documentation to the City of Pleasant Hill that the Civic Project would achieve additional annual GHG emission reductions of 56 MT CO_2e per year in 2021 and decreasing to 25 MT CO_2e per year in 2030, based on current estimates of GHG emissions, through any combination of the following measures or other measures approved by the City:

- Commit to purchasing electricity from a utility offering 100 percent renewable power for some or all of the power needs for the Civic Project.
- Install on-site solar panels to generate electricity for a portion of electricity consumption for the Civic Project.
- Install on-site charging units for electric vehicles consistent with parking requirements in California Green Building Standards Code (CALGreen) Section 5.106.5.2
- Provide a plan documenting how a ridesharing program for library employees would be implemented starting no later than 60 days after operations of the Civic Project begins.
- Purchase voluntary carbon credits from a verified GHG emissions credit broker in an amount sufficient to offset operational GHG emissions of approximately 56 MT CO_2e per year over the lifetime of the Civic Project (or a reduced amount

estimated based on implementation of other measures listed above). Copies of the contract(s) shall be provided to the City Planning Department.

Residential Project: Prior to the issuance of the certificate of occupancy, the contractor for the Residential Project shall provide documentation to the City of Pleasant Hill that the Residential Project would achieve additional annual GHG emission reductions of 30 MT CO_2e per year in 2021 and decreasing to 14 MT CO_2e per year in 2030, based on current estimates of the project-related GHG emissions, through any combination of the following measures or other measures approved by the City:

- Commit to purchasing electricity from a utility offering 100 percent renewable power for some or all of the power needs associated with the Residential Project.
- Install on-site solar panels to generate electricity for a portion of electricity consumption for the Residential Project.
- Install on-site charging units for electric vehicles consistent with parking requirements in California Green Building Standards Code (CALGreen) Section 5.106.5.2
- Purchase voluntary carbon credits from a verified GHG emissions credit broker in an amount sufficient to offset operational GHG emissions of approximately 30 MT CO_2e per year over the lifetime of the Residential Project (or a reduced amount estimated based on implementation of other measures listed above). Copies of the contract(s) shall be provided to the City planning department.

Level of Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

Consistency with GHG Reduction Plan, Policy, or Regulations

Impact GHG-2:	**Implementation of the proposed plan would not conflict with the applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.**

The City of Pleasant Hill has not adopted a GHG reduction plan. In addition, the City has not completed the GHG inventory, benchmarking, and goal-setting process required to identify a reduction target and to take advantage of the streamlining provisions contained in the CEQA Guidelines amendments adopted for SB 97. Since no local CAP is in place that would be applicable to the proposed plan, the proposed plan is assessed for its consistency with the ARB's adopted AB 32 Scoping Plan and the ARB's adopted 2017 Climate Change Scoping Plan Update. This would be achieved with an assessment of the proposed plan's compliance with applicable Scoping Plan measures.

Construction

Civic Project and Residential Project

Impacts related to a proposed plan's consistency with a GHG emissions reduction plan are primarily related to long-term operational activities. However, short-term construction activities would comply with and use equipment and fuel consistent with Statewide requirements set forth in the AB 32 Scoping Plan or the 2017 Scoping Plan Update. For example, fuel used during construction of the Civic Project and Residential Project would be compliant with the California Low Carbon Fuel Standard.

Furthermore, the Civic Project and Residential Project would be required to comply with city ordinances such as the Construction and Demolition Ordinance.[91] The City of Pleasant Hill's Construction and Demolition Ordinance requires that 50 percent of waste materials be diverted from landfills. All demolition materials identified as recyclable would be source-separated on-site and recycled. In addition, a Waste Management Plan would be submitted and approved prior to issuance of a building or demolition permit. Because construction of the Civic Project and Residential Project would not conflict with the AB 32 Scoping Plan or the 2017 Scoping Plan Update, the construction impact related to consistency with an applicable GHG emissions reduction plan would be less than significant.

Operation

Civic Project and Residential Project

AB 32 (ARB Adopted Scoping Plan) Consistency

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHG emissions to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan calls for an "ambitious but achievable" reduction in California's GHG emissions, cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from 2008 levels. The Scoping Plan contains a variety of strategies to reduce the State's emissions. As shown in Table 3.6-8, the Civic Project and Residential Project are consistent with most of the strategies, while others are not applicable.

Table 3.6-8: AB 32 (ARB-adopted 2008 Scoping Plan) Consistency Analysis

Scoping Plan Reduction Measure	Consistency
1. **California Cap-and-Trade Program Linked to Western Climate Initiative.** Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California Cap-and-Trade Program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.	**Not applicable.** Although the cap-and-trade system has begun, the Civic Project and the Residential Project are not projects targeted by the cap-and-trade system regulations and therefore this measure does not apply to the Civic Project or the Residential Project.
2. **California Light-Duty Vehicle GHG Standards.** Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	**Not applicable.** This is a Statewide measure that cannot be implemented by a project applicant or lead agency. California light-duty vehicle GHG standards, such as Pavley 2005 Regulations to Control GHG Emissions from Motor Vehicles and 2012 LEV III Amendments to the California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards, apply to new vehicles. Neither the Civic Project nor the Residential Project involves the manufacturing or sales of new vehicles; however, the standards would be applicable to the light-duty vehicles that access the plan area.

[91] City of Pleasant Hill. 2003. Construction and Demolition Recycling. Website: https://www.ci.pleasant-hill.ca.us/1251/Construction-Demolition-Recycling. Accessed March 1, 2019.

Table 3.6-8 (cont.): AB 32 (ARB-adopted 2008 Scoping Plan) Consistency Analysis

Scoping Plan Reduction Measure	Consistency
3. **Energy Efficiency.** Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	**Consistent.** This is a measure for the State to increase its energy efficiency standards in new buildings. The Civic Project and Residential Project are required to build to the new standards and would increase their energy efficiency through compliance with Title 24 and California Green Building Standards Code.
4. **Renewable Portfolio Standard.** Achieve 33 percent renewable energy mix Statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.	**Not applicable.** This is a Statewide measure that cannot be implemented by a project applicant or lead agency. PG&E is required to obtain 33 percent of its power supply from renewable sources to by the year 2020 pursuant to various regulations. PG&E is ahead of schedule in meeting the California Renewables Portfolio Standard of 33 percent by 2020 mandate. The Civic Project and Residential Project would purchase power that comprises a greater amount of renewable sources and could install renewable solar power systems that could further assist the utility in achieving the mandate.
5. **Low Carbon Fuel Standard.** Develop and adopt the Low Carbon Fuel Standard.	**Not applicable.** This is a Statewide measure that applies to transportation fuels utilized by vehicles in California and cannot be implemented by a project applicant or lead agency. All fuel consumption associated with construction and operational activities associated with the Civic Project and Residential Project would use fuel that meets these standards.
6. **Regional Transportation-Related GHG Targets.** Develop regional GHG emissions reduction targets for passenger vehicles. This measure refers to SB 375.	**Not applicable.** The Civic Project nor the Residential Project are not related to developing GHG emission reduction targets.
7. **Vehicle Efficiency Measures.** Implement light-duty vehicle efficiency measures.	**Not applicable.** The standards would be applicable to the light-duty vehicles that would access the plan area.
8. **Goods Movement.** Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	**Not applicable.** Neither the Civic Project nor the Residential Project propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
9. **Million Solar Roofs Program.** Install 3,000 MW of solar-electric capacity under California's existing solar programs.	**Consistent.** This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. The single-family homes included as a portion of the Residential Project would be prewired for solar, but would not include solar panels at this time. Overall, the implementation of the proposed plan would not preclude the implementation of this strategy.

Table 3.6-8 (cont.): AB 32 (ARB-adopted 2008 Scoping Plan) Consistency Analysis

Scoping Plan Reduction Measure	Consistency
10. **Medium/Heavy-Duty Vehicles.** Adopt medium and heavy-duty vehicle efficiency measures.	**Not applicable.** This is a Statewide measure that cannot be implemented by a project applicant or lead agency.
11. **Industrial Emissions.** Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce GHG emissions and provide other pollution reduction co-benefits. Reduce GHG emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive CH_4 emissions and reduce flaring at refineries.	**Not applicable.** This measure would apply to the direct GHG emissions at major industrial facilities emitting more than 500,000 MT CO_2e per year. The proposed plan includes a mix of uses including residential, library, and park uses, and the proposed plan would generate less than 2,000 MT CO_2e per year (see Table 3.6-6).
12. **High Speed Rail.** Support implementation of a high-speed rail system.	**Not applicable.** This is a Statewide measure that cannot be implemented by a project applicant or lead agency. Implementation of the proposed plan would not preclude the implementation of this strategy.
13. **Green Building Strategy.** Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	**Consistent.** The Civic Project and Residential Project would comply with the California Energy Code and, thus, incorporate applicable energy efficiency features designed to reduce energy consumption associated with operation of the Civic Project and Residential Project.
14. **High Global Warming Potential Gases.** Adopt measures to reduce high global warming potential gases.	**Consistent.** This measure is applicable to the high global warming potential gases that would be used by sources with large equipment (such as in air conditioning and commercial refrigerators). The Residential Project includes development of 34 single-family residential units with seven accessory dwelling units, while the Civic Project includes development of a park (including two athletic fields, bocce ball courts, and associated amenities), and a 25,000-square-foot library. As such, it is not anticipated that the Civic Project and Residential Project would include refrigeration subject to refrigerant management regulations adopted by the ARB. If the Civic Project or Residential Project were to install large air conditioning equipment subject to the refrigerant management regulations adopted by the ARB, they would be required to comply with all ARB requirements for the Stationary Equipment Refrigerant Management Program.

Table 3.6-8 (cont.): AB 32 (ARB-adopted 2008 Scoping Plan) Consistency Analysis

Scoping Plan Reduction Measure	Consistency
15. **Recycling and Waste.** Reduce CH_4 emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero waste.	**Consistent**. Implementation of the proposed plan would not conflict with implementation of this measure. The Civic Project and Residential Project are required to achieve the recycling mandates via compliance with the CALGreen code. The Civic Project and Residential Project would utilize City of Pleasant Hill recycling services. Republic Services provides solid waste disposal services, including recycling services, for the City of Pleasant Hill.
16. **Sustainable Forests.** Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	**Not applicable.** The plan area is in a built-up urban area. No forested lands exist on-site; therefore, no on-site preservation is possible.
17. **Water.** Continue efficiency programs and use cleaner energy sources to move and treat water.	**Consistent.** The Civic Project and Residential Project would comply with the California Energy Code and the California Updated Model Landscape Ordinance. Furthermore, the City of Pleasant Hill has a Water Efficient Landscape Ordinance that requires new buildings to submit plans that are water efficient. With adherence to these regulations, the proposed plan would consume energy and water in an efficient manner.
18. **Agriculture.** In the near-term, encourage investment in manure digesters and at the 5-year Scoping Plan update determine if the program should be made mandatory by 2020.	**Not applicable.** The plan area is not designated or in use for agriculture purposes. No grazing, feedlot, or other agricultural activities that generate manure occur on-site or are proposed to be implemented by the proposed plan**.**
Source of ARB Scoping Plan Reduction Measures: California Air Resources Board (ARB). 2008 (includes edits made in 2009). Climate Change Scoping Plan, a framework for change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed July 9, 2018.	

As shown in Table 3.6-8 the Civic Project and Residential Project are consistent with the applicable strategies and would not conflict with the recommendations of AB 32 in achieving a Statewide reduction in GHG emissions. Therefore, the proposed plan would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or conflict with implementation of the Scoping Plan.

ARB 2017 Climate Change Scoping Plan Update Consistency

The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. Table 3.6-9 provides an analysis of the proposed plan's consistency with the 2017 Scoping Plan Update measures. As shown in Table 3.6-9, many of the measures are not applicable to the Civic Project or Residential Project. The proposed plan is consistent with all strategies that are applicable.

Table 3.6-9: SB 32 (ARB-adopted 2017 Climate Change Scoping Plan Update) Consistency Analysis

2017 Scoping Plan Update Reduction Measure	Proposed Plan Consistency
SB 350 50 Percent Renewable Mandate. Utilities subject to the legislation will be required to increase their renewable energy mix from 33 percent in 2020 to 50 percent in 2030.	**Not applicable.** This measure would apply to utilities and not to individual development projects. The Civic Project and Residential Project would purchase electricity from a utility subject to the SB 350 Renewable Mandate. PG&E would be subject to the SB 350 Renewable Mandate.
SB 350 Double Building Energy Efficiency by 2030. This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels.	**Not applicable**. This measure applies to existing buildings. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency over time. The Civic Project and Residential Project would comply with the applicable Title 24 Energy Efficiency Standards in effect at the time building permits are received.
Low Carbon Fuel Standard. This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Not applicable.** This is a Statewide measure that cannot be implemented by a project applicant or lead agency. However, vehicles accessing the plan area would be benefit from the standards.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario). Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	**Not applicable.** This measure is not applicable to the Civic Project or Residential Project; however, vehicles accessing the plan area would be benefit from the increased availability of cleaner technology and fuels. Future residents, visitors, and employees can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. Furthermore, delivery trucks and buses that would serve future residents, visitors, and employees would be made by increasing numbers of ZEV delivery trucks.
Sustainable Freight Action Plan The plan's target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	**Not applicable.** This measure applies to owners and operators of trucks and freight operations. The proposed plan includes a mix of uses would support truck and freight operations. It is expected that deliveries throughout the State would be made with an increasing number of ZEV delivery trucks, including deliveries that would be made to future residents of the Residential Project.
Short-Lived Climate Pollutant Reduction Strategy. The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	**Consistent.** No wood-burning devices are proposed as part of the Civic Project or Residential Project. Natural gas hearths produce very little black carbon compared to wood-burning fireplace; therefore, the proposed plan would not include major sources of black carbon.
SB 375 Sustainable Communities Strategies. Requires Regional Transportation Plans to include a Sustainable Communities Strategy for reduction of per capita vehicle miles traveled.	**Not applicable.** The proposed plan does not include the development of a Regional Transportation Plan.

Table 3.6-9 (cont.): SB 32 (ARB-adopted 2017 Climate Change Scoping Plan Update) Consistency Analysis

2017 Scoping Plan Update Reduction Measure	Proposed Plan Consistency
Post-2020 Cap-and-Trade Program. The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	**Not applicable.** The Civic Project and the Residential Project are not projects targeted by the cap-and-trade system regulations, and, therefore, this measure does not apply. However, the post-2020 Cap-and-Trade Program indirectly affects people and entities who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers.
Natural and Working Lands Action Plan. ARB is working in coordination with several other agencies at the federal, State, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor's Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California's natural and working land.	**Not Applicable**. The plan area is in a built-up urban area and would not be considered natural or working lands.
Source of ARB Scoping Plan Reduction Measures: California Air Resources Board (ARB). 2017. California's 2017 Climate Change Scoping Plan, the strategy for achieving California's 2030 GHG target. Website: https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm. Accessed March 1, 2019.	

As shown in Table 3.6-8 the proposed plan is consistent with the applicable strategies and would not conflict with the recommendations of SB 32 in achieving a Statewide reduction in GHG emissions. Therefore, the proposed plan would not significantly hinder or delay the State's ability to meet the reduction targets contained in SB 32 or conflict with implementation of the Scoping Plan Update.

Overall

In general, the Statewide AB 32 Scoping Plan and the SB 32 Scoping Plan Update rely on increased building energy efficiency as a method to address one of the largest Statewide GHG sectors (i.e., Energy Use). The new buildings to be constructed as part of the Civic Project and Residential Project, which would include residences (Residential Project) and an approximately 23,900 square foot library foot library[92] (Civic Project), would be compliant with all applicable energy efficiency standards such as Title 24 and CALGreen. Compliance with regulations would result in higher energy efficiency operations than the existing buildings. As presented in Table 3.6-8, the proposed plan is consistent with the applicable strategies and would not conflict with the recommendations of AB 32 in achieving a Statewide reduction in GHG emissions. Therefore, the proposed plan would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or conflict with implementation of the Scoping Plan. Furthermore, as shown in Table 3.6-9, implementation of the proposed plan would not conflict with the reduction measures outlined in the 2017 Scoping Plan Update addressing the SB 32 targets. Therefore, the proposed plan would not conflict with any

[92] To provide a conservative estimate, this EIR assumed that the library is 25,000 square feet.

applicable plan, policy or regulation of an agency adopted to reduce the emissions of GHGs. The impact would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Energy Use

Impact GHG-3:	**Implementation of the proposed plan would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during construction or operation of the proposed plan.**

Construction

Civic Project and Residential Project

During construction, the Civic Project and Residential Project would result in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment, and the use of electricity for temporary buildings, lighting, and other sources. No natural gas would be utilized as part of construction. Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during site clearing, grading, paving, and building construction. The types of equipment could include gasoline- and diesel-powered construction and transportation equipment, including trucks, bulldozers, frontend loaders, forklifts, and cranes. Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. California regulations (CCR Title 13, §§ 2449(d)(3) and 2485) limit idling from both on-road and off-road diesel-powered equipment and are enforced by the ARB. In addition, given the cost of fuel, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. The Pleasant Hill Municipal Code limits construction activities to the hours between 7:30 a.m. and 7:00 p.m. on weekdays, and 9:00 a.m. and 6:00 p.m. on Saturdays and Sundays. As on-site construction activities would be restricted between these hours, it is anticipated that the use of construction lighting would be minimal. Due to the temporary nature construction and the financial incentives to for developers and contractors to use energy-consuming resources in an efficient manner, the construction phase of the proposed plan would not result in wasteful, inefficient, and unnecessary consumption of energy. Therefore, the construction-related impact related to fuel and electricity consumption would be less than significant.

Operation

Civic Project and Residential Project

Electricity and Natural Gas

Building operations for the Civic Project and Residential Project would involve energy consumption for multiple purposes including, but not limited to, building heating and cooling, refrigeration, lighting, and electronics as well as outdoor lighting. This analysis conservatively assumes that the

Civic Project and Residential Project would be operational at the same time. Based on CalEEMod estimations within the modeling output files used to estimate GHG emissions associated with the Civic and Residential Project, operations would consume approximately 516,355 kWh of electricity per year and an estimated 2,200,207 kilo-BTU per year Appendix C). The Civic Project and Residential Project would be designed and constructed in accordance with the City's latest adopted energy efficiency standards, which are based on the State's Title 24 energy efficiency standards. These standards are widely regarded as the most advanced energy efficiency standards and compliance would ensure that operational energy consumption would not result in the use of energy in a wasteful manner or inefficient manner. Therefore, the operational impact related to building electricity and natural gas consumption would be less than significant.

Fuel

Operational energy would also be consumed during vehicle trips. Fuel consumption would be primarily related to vehicle use by residents, visitors, and employees. This analysis conservatively assumes that the Civic Project and Residential Project would be operational at the same time. Based on the estimates contained in the CalEEMod output files, vehicle trips associated with the Civic Project and Residential Project would result in approximately 5.2 million vehicle miles traveled, and consume an estimated 230,088 gallons of gasoline and diesel combined on an annual basis.[93] Complete CalEEMod output files are included in Appendix C. The plan area is located near the Interstate 680 (I-680) North Main Street interchange. Specifically, the plan area is approximately 0.30 mile west of I-680. As such, it would be in proximity to a regional route of travel. The plan area is also located 0.75 mile from the Pleasant Hill BART Station, which is accessible through other forms of public transportation. County Connection Route 9 provides bus service to the plan area and its vicinity. Bus stops serving this route are located along Oak Park Boulevard and along Patterson Boulevard, located approximately 0.22 mile west of the plan area. Route 9 provides services from Diablo Valley College to Pleasant Hill BART Station, located at 1365 Treat Boulevard, on the east side of I-680 near the Treat Boulevard interchange. The existing transportation facilities in the area would provide future residents, visitors, and employees with access to public transportation, thus further reducing fuel consumption demand. For these reasons, transportation fuel consumption would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during long-term operations. Therefore, the operational impact related to vehicle fuel consumption would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Energy Efficiency and Renewable Energy Standards Consistency

Impact GHG-4:	**Implementation of the proposed plan would not conflict with or obstruct any applicable State or local plan for renewable energy or energy efficiency.**

At the time of this analysis, the City has not developed a specific energy reduction plan; however, the State focuses on reducing energy from new and existing development as a mechanism to reduce

[93] Based on the 5,200,000 annual VMT consistent with CalEEMod output (Appendix C) and an average fuel consumption determined using EMFAC2014 factors for Contra Costa County in the 2021 calendar. Website: https://www.arb.ca.gov/emfac/2014/. Accessed March 4, 2019.

GHG emissions, which is addressed under Impact GHG-2. A significant impact for would occur if the proposed plan would conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Construction

Civic Project and Residential Project

The Civic Project and Residential Project would result in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment, and the use of electricity for temporary buildings, lighting, and other sources. Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during site clearing, grading, paving, and building construction. The types of equipment could include gasoline- and diesel-powered construction and transportation equipment, including trucks, bulldozers, frontend loaders, forklifts, and cranes. Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. California regulations (CCR Title 13, §§ 2449(d)(3) and 2485) limit idling from both on-road and off-road diesel-powered equipment and are enforced by the ARB. The proposed plan would be required to comply with these regulations. There are no renewable energy standards that would apply to construction of the Civic Project and Residential Project. Therefore, construction would not conflict with or obstruct any regulations adopted for the purposes of increasing the use of renewable energy. Therefore, it is anticipated that construction of the Civic Project and Residential Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing energy use or increasing the use of renewable energy. Therefore, construction-related energy efficiency and renewable energy standards consistency impacts would be less than significant.

Operation

Civic Project and Residential Project

The Civic Project and Residential Project would be served with electricity provided by PG&E.[94] About 80 percent of the electricity that PG&E delivered in 2017 was a combination of renewable and GHG-emissions-free resources.[95] The 2017 power mix included 27 percent non-emitting nuclear generation, 18 percent large hydroelectric facilities, 33 percent eligible renewable resources, such as wind, geothermal, biomass, solar, and small hydro, 20 percent natural gas/other, and 2 percent unspecified power. PG&E is ahead of schedule in meeting the California Renewables Portfolio Standard of 33 percent by 2020 mandate with renewable energy making up 51 percent of its energy portfolio. As such, the Civic Project and Residential Project would purchase power comprised of a greater amount of renewable sources compared to what is required by regulations in effect. In addition, buildings would be designed and constructed in accordance with the State's Title 24 energy efficiency standards. Thus, the proposed plan would not conflict with any applicable plan, policy, or regulation adopted for the

[94] Pacific Gas & Electric (PG&E). 2019. Exploring Clean Energy Solutions. Website: https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page. Accessed February 26, 2019.

[95] Renewable sources included solar, wind, geothermal, biomass, and small hydroelectric sources. GHG-emissions-free sources of energy included nuclear and large hydro.

purpose of reducing energy use or increasing the use of renewable energy. Therefore, operational energy efficiency and renewable energy standards consistency impacts would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

3.6.5 - Cumulative Impacts

GHG Emissions

GHG emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the GHG emissions from past, present, and future projects and activities have contributed, currently are contributing, and would contribute to global climate change and its associated environmental impacts.

Per BAAQMD guidance, project GHG emissions are inherently cumulative and do not require the estimation of cumulative projects in the region of a project. The determination of GHG cumulative impacts is, thus, based on the State target established by AB 32 to reduce GHG emissions to 1990 levels by 2020. In order to ensure that this goal would be achieved, Air Districts and Lead Agencies developed GHG thresholds to ensure compliance with the State target. As stated in Appendix D of the 2017 BAAQMD CEQA Guidelines, projects with GHG emissions in conformance with these thresholds, therefore, would not be considered significant for purposes of CEQA. In addition, although the emissions from such cumulative projects would add an incremental amount to the overall GHG emissions that cause global climate change impacts, emissions from projects consistent with these thresholds would not be a "cumulatively considerable" contribution under CEQA. Such projects would not be "cumulatively considerable," because they would be helping to solve the cumulative problem as a part of the AB 32 process. As determined under Impact GHG-1, the proposed plan would exceed the applicable BAAQMD thresholds, and implementation of mitigation measures would be required. As discussed under Impact GHG-1, implementation of MM GHG-1 would reduce impacts related to the proposed Civic Project's and Residential Project's generation of GHG emissions to a less-than-significant level. Furthermore, as discussed under Impact GHG-2, the Civic Project and Residential Project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of GHGs. As such, there would be a less than significant with mitigation impact related to GHG emissions generation.

Energy

The geographic scope of the cumulative energy analysis is the PG&E service area. Cumulative projects considered as part of this cumulative analysis include those assumed under buildout of the Pleasant Hill 2003 General Plan.[96]

[96] City of Pleasant Hill. 2003. Pleasant Hill 2003 General Plan. July 21. Website: https://www.ci.pleasant-hill.ca.us/132/Current-General-Plan. Accessed February 27, 2019.

Cumulative projects would be required to comply with Title 24 minimum energy efficiency standards. The cumulative buildings would be designed in accordance with Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings as applicable. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC] and water heating systems), and indoor and outdoor lighting. The incorporation of the Title 24 standards into the design of the cumulative projects, including the Civic Project and Residential Project, would ensure that the cumulative projects would not result in the use of energy in a wasteful manner. In addition, as discussed under Impact GHG-3, fuel consumption associated with implementation of the proposed plan would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, the proposed plan, in conjunction with other existing, planned, and foreseeable future projects, would result in a less than significant cumulative impact related to energy consumption.

Level of Cumulative Significance Before Mitigation

Potentially Significant (Civic Project and Residential Project)

Cumulative Mitigation Measures

Implement GHG-1 (Civic Project and Residential Project)

Level of Cumulative Significance After Mitigation

Less Than Significant with Mitigation (Civic Project and Residential Project)

THIS PAGE INTENTIONALLY LEFT BLANK

3.7 - Hazards, Hazardous Materials, and Wildfire

3.7.1 - Introduction

This section describes the existing hazards, hazardous materials, and wildfire conditions in the Specific Plan area (plan area) as well as the relevant regulatory framework. This section also evaluates the possible impacts related to hazards, hazardous materials, and wildfire that could result from implementation of the Specific Plan (proposed plan). Information in this section is based on the project-specific Phase I Environmental Site Assessments (ESAs) prepared by ENGEO for the Civic Project and Residential Project sites, a Phase II ESA Sampling Report for the Civic Project site, prepared by ENGEO, to address specific conditions identified in the Phase I ESA for the Civic Project site; a Lead and Asbestos Sampling Report, conducted by Stockton Environmental, for the existing library at 1750 Oak Park Boulevard; as well as an Asbestos and Lead Based Paint Sampling Report prepared by Stockton Environmental Inc. for the existing library at 1750 Oak Park Boulevard, all of which are included in Appendix G. The analysis in this section also includes input from the Pleasant Hill 2003 General Plan and Contra Costa County Fire Protection District (CCCFPD). The following comments were received during the Environmental Impact Report (EIR) scoping period related to hazards and hazardous materials.

- Handling of hazardous materials in the existing library.
- Number of entries into the parking lot may be inadequate during emergencies.
- Flooding issues for the residential portion of the Residential Project site.
- Requests that hazardous construction and demolition materials should be separated from those that can be recycled and disposed; debris must go to a facility that complies with applicable requirements.

3.7.2 - Environmental Setting

Fundamentals

Hazards

This description of existing conditions focuses on hazards from fire and overhead power lines, as well as hazardous materials and wastes. A hazard is a situation that poses a level of threat to life, health, property, or the environment. Hazards can be dormant or potential, with only a theoretical risk of harm. However, once a hazard becomes active, it can create an emergency. A hazardous situation that has already occurred is called an incident. Emergency response is action taken in response to an unexpected and dangerous occurrence in an attempt to mitigate its impact on people, structures, or the environment. Emergency situations can range from natural disasters to hazardous-materials problems and transportation incidents.

Hazardous Materials

Hazardous materials, as defined by the California Code of Regulations, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the

environment when handled, disposed, or otherwise managed improperly. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic—causes human health effects
- Ignitable—has the ability to burn
- Corrosive—causes severe burns or damage to materials
- Reactive—causes explosions or generates toxic gases

A hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. The California Code of Regulations, Title 22, Sections 66261.20-24 contain technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

Hazardous Building Materials

Many older buildings contain building materials that consist of hazardous materials. These materials include lead-based paint, asbestos-containing material, and polychlorinated biphenyls (PCBs).

Prior to the United States Environmental Protection Agency (EPA) ban in 1978, lead-based paint was commonly used on interior and exterior surfaces of buildings. Disturbances such as sanding and scraping activities, renovation work, gradual wear and tear, old peeling paint, and paint dust particulates have been found to contaminate surface soils or cause lead dust to migrate and affect indoor air quality. Exposure to residual lead can cause severe health effects, especially in children.

Asbestos is a naturally occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction materials before such uses were banned by the EPA in the 1970s. In addition, many types of electrical equipment contained PCBs as an insulator, including transformers and capacitors. After PCBs were determined to be a carcinogen in the mid to late 1970s, the EPA banned PCB use in new equipment and began a program to phase out certain existing PCB-containing equipment. For example, fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit.

Hazardous Substances

A hazardous substance can be any biological, natural, or chemical substance, whether solid, liquid, or gas, that may cause harm to human health. Hazardous substances are classified on the basis of their potential health effects, whether acute (immediate) or chronic (long-term). Dangerous goods are classified on the basis of immediate physical or chemical effects, such as fire, explosion, corrosion, and poisoning. An accident involving dangerous goods could seriously harm human health or damage property or the environment. Harm to human health may happen suddenly (acute), such as dizziness, nausea, and itchy eyes or skin; or it may happen gradually over years (chronic), such as dermatitis or cancer. Some people can be more susceptible than others. Hazardous substances and dangerous goods can include antiseptic used for a cut, paint for walls, a cleaning product for the

bathroom, chlorine in a pool, carbon monoxide from a motor vehicle, fumes from welding, vapors from adhesives, or dust from cement, stone, or rubber operations. Such hazardous substances can make humans very sick if they are not used properly.

Hazardous Wastes

Hazardous waste is any hazardous material that is to be discarded, abandoned, or recycled. The criteria that define a material as hazardous also define a waste as hazardous. Specifically, materials and waste may be considered hazardous if they are poisonous (toxic); can be ignited by open flame (ignitable); corrode other materials (corrosive); or react violently, explode, or generate vapors when mixed with water (reactive). Soil or groundwater contaminated with hazardous materials above specified regulatory state or federal thresholds is considered hazardous waste if it is removed from a site for disposal. If handled, disposed, or otherwise handled improperly, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. The California Code of Regulations, Title 22, Sections 66261.20-24 contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

Hazardous Materials Listing

The Cortese List is a list of known hazardous materials, including hazardous waste facilities, that meet one or more of the provisions of Government Code Section 65962.5, including:

- The list of hazardous waste and substances sites from the California Department of Toxic Substances Control (DTSC) EnviroStor database.[1]
- The list of leaking underground storage tank (LUST) sites by county and fiscal year from the State Water Resources Control Board (State Water Board) GeoTracker database.[2]
- The list of solid waste disposal sites identified by the State Water Board with waste constituents exceeding hazardous waste levels outside the waste management unit.[3]
- The list of active cease-and-desist orders and cleanup and abatement orders from the State Water Board.[4]
- The list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, as identified by DTSC.[5]

[1] California Department of Toxic Substances Control (DTSC). "Cortese" list of DTSC EnviroStor database list of Hazardous Waste and Substances sites. DTSC Hazardous Waste and Substances Site List—Site Cleanup (Cortese List). Website: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm.

[2] State Water Resources Control Board (State Water Board). "Cortese" List of Leaking Underground Storage Tank Sites by County (San Francisco County). Website: https://geotracker.waterboards.ca.gov/sites_by_county.

[3] California Environmental Protection Agency (Cal/EPA). "Cortese" list of solid waste disposal sites identified with waste constituents above hazardous waste levels outside the waste management unit. Website: http://www.calepa.ca.gov/files/2016/10/SiteCleanup-CorteseList-CurrentList.pdf.

[4] California Environmental Protection Agency (CalEPA). "Cortese" list of State Water Board sites with active Cease and Desist Orders or Cleanup Abatement Orders. Website: http://www.calepa.ca.gov/files/2016/10/SiteCleanup-CorteseList-CDOCAOList.xlsx.

[5] California Environmental Protection Agency (CalEPA). "Cortese" list of sites subject to Corrective Action pursuant to Health and Safety Code 25187.5. Website: https://www.calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/.

Presence of Hazardous Materials

The hazards in the City of Pleasant Hill and the plan area discussed in this section are related primarily to hazardous building materials. Hazards from hazardous building materials are typically site-specific, so existing conditions related to the transport, use, and disposal of hazardous materials are discussed below under "plan area."

Contra Costa County

Land uses in Contra Costa County range from rural, agricultural, and open space to urban and developed. Contra Costa County contains extensive heavy industrial development that may be associated with hazardous materials uses along its west and north coasts. These heavy industrial uses present potential risks to public safety due to explosion and flammability of petroleum and chemical materials.[6] In addition, storage tanks and pipelines are located throughout the County and could present public safety risks due to geologic conditions. No particular routes for hazardous materials transportation are designated in the County.[7]

Hazardous materials such as asbestos and lead are also likely present in building materials and paints in older structures. Emergency response in Contra Costa County within the plan area is coordinated by the CCCFPD. The CCCFPD provides response services to hazardous materials incidents, as well as fire protection and emergency medical services, as discussed further in Section 3.12, Public Services.

City of Pleasant Hill

Commercial and light industrial operations have the potential to release hazardous materials to soil and groundwater. There are several gas stations throughout the City that are listed as cleanup sites on the State Water Board Geotracker site. There are two fuel pipelines that traverse the City: one beneath Taylor Boulevard and one beneath the Iron Horse Trail.[8] Other potential pollutant sources include gasoline service stations and service industries that use solvents or other hazardous materials.

Plan Area

The southeast area of the City of Pleasant Hill is characterized by urban land uses and relatively flat relief.

Information from historical topographic maps, aerial photos, the State Water Board GeoTracker Database, the DTSC EnviroStor Database, the EPA ECHO Database, Contra Costa County Department of Conservation and Development Building Inspection Division, Contra Costa Environmental Health Department, Contra Costa County Hazardous Materials Program, CCCFPD, Pleasant Hill City Clerk's Office, Contra Costa County Assessor's Office, and counter personnel at the San Francisco Bay Regional Water Quality Control Board (RWQCB) was reviewed to determine if previous site investigations were performed related to any of the buildings within the plan area.

[6] Contra Costa County General Plan, page 10-34.
[7] *Ibid*.
[8] City of Pleasant Hill 2003 Pleasant Hill 2003 General Plan, page 64.

Civic Project

The Civic Project site is not listed in any regulatory databases and does not contain any existing structures.

Given the former presence of a school on the Civic Project site, ENGEO conducted a limited surficial soil sampling program to evaluate potential near-surface soil impacts associated with the application of lead-based paint to the former structures and the use of pesticides. Review of the laboratory test results found detectable but less than significant concentrations of arsenic, lead and select organochlorine pesticides.

At the time of the geotechnical exploration performed by ENGEO in February 2018, discoloration/staining and olfactory evidence of petroleum-impacted material was noted in a soil core retrieved from a soil boring advanced within close proximity of the existing sewer line. The petroleum impact was noted at a depth of approximately 24 feet below the ground surface. No other soil borings advanced across the Property or recovered samples exhibited olfactory evidence of petroleum impact. The potential source of impact may have been derived from a leak in the existing sewer line. As discussed in the Phase II ESA sampling report prepared by ENGEO, dated December 19, 2018, Phase II ESA sampling was completed to characterize potential subsurface conditions. The Phase II ESA activities included the creation of four test pits and the collection of 15 soil samples along Oak Park Boulevard and Monticello Avenue. Excavation of the test pits was observed by an environmental professional, who confirmed that the pits contained no evidence of debris or staining. Analysis of the soil samples confirmed that all detectable concentrations of lead are below DTSC environmental screening levels (ESL) for residential land use, and are within typical within ambient ESL for soil and groundwater. No further action is required.

Residential Project

The Phase I report prepared by ENGEO for the Residential Project site identified the presence of contamination. Specifically, the ENGEO report referenced a prior study, conducted in 2017 by Pari & Gershon, Inc. (PGI), which determined that the existing library has been identified on the Hazardous Waste Information System (HAZNET) database. PGI confirmed that asbestos-containing material was removed and disposed of off-site on two occasions: in 1994, 5.53 tons of asbestos-containing material was removed and in 2011, 0.4 tons of asbestos-containing material was removed. In addition, the database indicated that "Hazardous Substances" and lead-based paint were identified at the existing library. The report recommended that a licensed contractor perform an additional asbestos and lead-based paint survey prior to demolition.

In March 2019, Stockton Environmental, Inc. performed an asbestos and lead-based paint survey, taking samples of materials and completing testing to confirm the presence of any remaining contaminants that would require abatement prior to demolition. As summarized in the report, the library building and administrative offices contain residual asbestos and lead based paint that must be abated prior to demolition.

Wildfire Hazard Area Designations

Contra Costa County

According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone Map, much of Contra Costa County is located in a Moderate, High, and Very High Fire Hazard Zone due to the mountainous terrain and natural vegetation. In general, the majority of these areas are designated High Fire Hazard Severity Zones with areas of significant elevation change, such as Mount Diablo State Park and Briones Regional Park. Prevailing winds in the County tend to travel in a south to southwest direction.[9]

City of Pleasant Hill

The City of Pleasant Hill does not contain lands classified as Very High Fire Hazard Severity Zones. However, west of the City (across Taylor Road) is designated as a High Fire Hazard Severity Zone. The closest Bay Area Air Quality Management District (BAAQMD) air data monitoring station is located in the City of Concord, approximately 3.1 miles to the northeast. Prevailing winds at this station are in the southwest direction with an average speed of 14-17 miles per hour (mph).[10]

Plan Area

According to CAL FIRE, the plan area is not located within a designated "Fire Hazard Severity Zone in a State Responsibility Area" or "Very High Fire Hazard Severity Zone in a Local Responsibility Area."[11] With respect to a Local Responsibility Area, the closest designated "High" fire hazard zone is located approximately 1.3 miles to the west of the plan area.

Wildfire-conducive Conditions

Because of substantial open space areas and associated vegetation and wildlife habitats throughout the state, California is subject to fire hazards. Grassland or other vegetation in California is easily ignited, particularly in dry seasons. Wildfire is a serious hazard in high dry fuel load areas, particularly near areas of natural vegetation and steep slopes, since fires tend to burn more rapidly on steeper terrain. Wildfire is also a serious hazard in areas of high wind, given that fires will travel faster and farther geographically when winds are higher. Furthermore, wildfire is more likely in areas where electric power lines are located above ground and could ignite vegetation where it comes into contact.

Contra Costa County

Land uses in Contra Costa County range from rural, agricultural, and open space; to urban and developed. According to the CAL FIRE Fire Hazard Severity Zone Map, much of Contra Costa County is located in a Moderate, High, and Very High Fire Hazard Zone due to the mountainous terrain and natural vegetation. In particular, areas near open space areas such as, Mount Diablo State Park, Briones Regional Park, and Tilden Regional Park, are located in High and Very High fire hazard zones.

[9] Bay Area Air Quality Management District (BAAQMD). Air Monitoring Data. Accessed February 19, 2019. Website: http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data?DataViewFormat=yearly&DataView=met&StartDate=2/19/2019&ParameterId=204.

[10] *Ibid.*

[11] California Department of Forestry and Fire Protection (CAL FIRE). Contra Costa County Fire Hazard Severity Zone Maps. Website: http://www.fire.ca.gov/fire_prevention/fhsz_maps_contracosta. Accessed February 8, 2019.

In general, the average wind speed in Contra Costa County range from 14-17 mph and blow southwest.[12] Electric power lines mostly occur in urban areas and along roadways. Natural gas pipelines occur frequently across Contra Costa County, including residential and commercial areas. Natural gas poses a lower risk of causing a fire than petroleum products because it is transported at lower pressures and, when released, rises and dissipates into the atmosphere.[13]

City of Pleasant Hill

The City of Pleasant Hill is located in a mostly urbanized, flat area and does not contain any CAL FIRE designated "High" or "Very High" fire hazard zones. The average wind speed in the City of Concord and near the City of Pleasant Hill ranges from 14–17 mph and blows southwest.[14] There are two fuel pipelines that traverse the City: one beneath Taylor Boulevard and one beneath the Iron Horse Trail.[15] Electric lines typically occur above ground, along streets and roadways.

Plan Area

The plan area is located in the southeast portion of the City. The plan area is primarily undeveloped and contains grassland and other vegetation that is dry in summer and autumn months. The plan area is relatively flat with little to no slopes and is located in an urbanized area surrounded by residential development as well as schools uses and parks. The closest BAAQMD air data monitoring station is located in the City of Concord, approximately 3.1 miles to the northeast. Prevailing winds at this station have been recorded in the southwest direction with an average speed of 14-17 miles per hour (mph).[16]

There are existing aboveground electrical power lines along Monticello Avenue and Oak Park Boulevard within the boundaries of the plan area.

Emergency and Evacuation Routes/Access

Contra Costa County

The Contra Costa County Office of the Sheriff: Emergency Services Division is responsible for planning, outreach, and training or disaster management and emergency preparedness throughout the County.[17] The Contra Costa County General Plan establishes a 5-minute response time standard for responding to fire protection calls for service. Within Contra Costa County, the main routes into and out of the County that would be most likely used as evacuation routes are Interstate 80 (I-80), I-680, and I-580, as well as State Route 4 (SR-4) and SR-24.

[12] Bay Area Air Quality Management District (BAAQMD). Air Monitoring Data. Accessed February 19, 2019. Website: http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data?DataViewFormat=yearly&DataView=met&StartDate=2/19/2019&ParameterId=204.
[13] Contra Costa County General Plan, Safety Element, page 10-37.
[14] Bay Area Air Quality Management District (BAAQMD). Air Monitoring Data. Accessed February 19, 2019. Website: http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data?DataViewFormat=yearly&DataView=met&StartDate=2/19/2019&ParameterId=204.
[15] City of Pleasant Hill 2003 Pleasant Hill 2003 General Plan, page 64.
[16] *Ibid.*
[17] Contra Costa County Office of the Sheriff. 2018. http://www.cocosheriff.org/bureaus/support_services/emergency.htm.

City of Pleasant Hill

The Pleasant Hill Police Department is responsible for planning, outreach, and training or disaster management and emergency preparedness for the City. The main routes into and out of the City that would be most likely used as evacuation routes are I-680, Oak Park Boulevard, Taylor Boulevard, and Alhambra Avenue.

Plan Area

Pleasant Hill Police Department is responsible for planning, outreach, and training or disaster management and emergency preparedness for the plan area.[18] The main evacuation routes into and out of the plan area would be Oak Park Boulevard, Monticello Avenue, and Santa Barbara Road.

Post-fire Slope Instability and Drainage Pattern Changes

Slope instability from wildfire scarring of the landscape can result in slope instability in the form of more intensive flooding and landslides. These post-fire slope soils and altered drainage patterns can result in soil creep on downslope sides of foundations and reduce lateral support.

Contra Costa County Area

The major post-wildfire hazards in Contra Costa County are unstable hill slopes and altered drainage patterns. Slopes may suffer landslides, slumping, soil slips, and rockslides. Contra Costa County General Plans historically have recognized that major slope areas in excess of 26 percent are "not readily developable" and "undevelopable," recognizing the cost and engineering difficulties of grading steep slopes as well as their inherent unsuitability.[19] Figure 10-6 of the Contra Costa County General Plan shows Landslide Hazards in Contra Costa County. The most recent fire in Contra Costa County is the Alhambra Fire (2019, off SR-4 and Alhambra Avenue in the City of Martinez), located approximately 6 miles to the northwest.

Plan Area

The plan area has not experienced wildfire and does not reflect any related effects to slope instability or drainage pattern changes. According to Figure 10-6 of the Contra Costa County General Plan, the plan area is not located on a site susceptible to landslides or an area where landslides previously occurred.

3.7.3 - Regulatory Framework

Federal

Occupational Health and Safety Act

The Occupational Safety and Health Administration (OSHA) of the United States Department of Labor is responsible for implementing and enforcing federal laws and regulations that address worker health and safety. OSHA requires specific training for hazardous materials users and handlers, provision of information (procedures for personal safety, hazardous-materials storage and handling, and emergency response) to employees who may be exposed to hazardous materials, and

[18] City of Pleasant Hill Police Department. No date. Be Prepared. Website: http://www.ci.pleasant-hill.ca.us/410/Be-Prepared. Accessed: March 1, 2019.
[19] Contra Costa County General Plan, page 10-22.

acquisition of material safety data sheets from materials manufacturers. Material safety data sheets describe the risks, as well as proper handling and procedures, related to particular hazardous materials. Employee training must include response and remediation procedures for hazardous materials releases and exposures. Construction workers and operational employees working within the plan area would be subject to these requirements.

Code of Federal Regulations, Titles 29 and 40

Regulations in Code of Federal Regulations Title 29 include requirements to manage and control exposure to lead-based paint and asbestos containing materials. In California, these requirements are implemented by the California Occupational Safety and Health Administration (Cal/OSHA) under California Code of Regulations (CCR) Title 8 (see further discussion of CCR Title 8 below). The removal and handling of asbestos-containing materials is governed primarily by EPA regulations under Code of Federal Regulations Title 40. The regulations require that the appropriate state agency be notified before any demolition, or before any renovations, of buildings that could contain asbestos or asbestos-containing materials above a specified threshold.

Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act

The EPA is responsible for implementing and enforcing federal laws and regulations pertaining to hazardous materials. The primary legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) and the Emergency Planning and Community Right-to-Know Act (known as SARA Title III). RCRA and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes and mandate that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment, including detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities. As permitted by RCRA, in 1992, the EPA approved California's program called the Hazardous Waste Control Law (HWCL), administered by the DTSC, to regulate hazardous wastes in California, as discussed further below. The purpose of CERCLA is to identify and clean up chemically contaminated sites that pose a significant environmental health threat, and the Hazard Ranking System is used to determine whether a site should be placed on the National Priorities List for cleanup activities. SARA relates primarily to emergency management of accidental releases and requires annual reporting of continuous emissions and accidental releases of specified compounds that are compiled into a nationwide Toxics Release Inventory. Finally, SARA Title III requires formation of state and local emergency planning committees that are responsible for collecting material handling and transportation data for use as a basis for planning and provision of chemical inventory data to the community at large under the "right-to-know" provision of the law.

Hazardous Materials Transportation Act

Under the Hazardous Materials Transportation Act of 1975, the United States Department of Transportation (DOT), Office of Hazardous Materials Safety regulates the transportation of hazardous materials on water, rail, highways, through air, or in pipelines, and enforces guidelines created to protect human health and the environment and reduce potential impacts by creating hazardous-

material packaging and transportation requirements. It also includes provisions for material classification, packaging, marking, labeling, placecarding, and shipping documentation. The DOT provides hazardous-materials safety training programs and supervises activities involving hazardous materials. In addition, DOT develops and recommends regulations governing the multimodal transportation of hazardous materials.

Aboveground Petroleum Storage Act, and Spill Prevention, Control, and Countermeasure Rule

The Aboveground Petroleum Storage Act of 1990, and the Spill Prevention, Control, and Countermeasure (SPCC) Rule (amended 2010) of the Oil Pollution Prevention regulation (40 Code of Federal Regulations [CFR] 112) require the owner or operator of a tank facility with an aggregate storage capacity greater than 1,320 gallons to notify the local Certified Unified Program Agency (CUPA) and prepare an SPCC plan. The SPCC plan must identify appropriate spill containment measures and equipment for diverting spills from sensitive areas, and must discuss facility-specific requirements for the storage system, inspections, recordkeeping, security, and training.

Clean Water Act

The Clean Water Act (CWA) (Title 33 § 1251 *et seq*. of the United States Code [33 USC 1251, *et seq*.]) is the major federal legislation governing water quality. The CWA established the basic structure for regulating discharges of pollutants into waters of the United States (not including groundwater). The objective of the act is "to restore and maintain the chemical, physical, and biological integrity of the nation's waters." The CWA establishes the basic structure for regulating the discharge of pollutants into waters of the United States. Responsibility for administering the CWA resides with the State Water Board and nine RWQCBs; the San Francisco Bay RWQCB administers the CWA in the Pleasant Hill area.

Section 404 of the CWA regulates temporary and permanent fill and disturbance of waters of the United States, including wetlands. The United States Army Corps of Engineers requires that a permit be obtained if a project proposes to place fill in navigable waters and/or to alter waters of the United States below the ordinary high-water mark in nontidal waters. Section 401 of the CWA requires compliance with State water quality standards for actions within State waters. Compliance with the water quality standards required under Section 401 is a condition for issuance of a Section 404 permit. Under Section 401 of the CWA, every applicant for a permit or license for any activity that may result in a discharge to a water body must obtain a State water quality certification from the RWQCB to demonstrate that the proposed activity would comply with State water quality standards.

State

California Hazardous Waste Control Law

The Hazardous Waste Control Law is the primary hazardous waste statute in the State of California, and implements RCRA as a "cradle-to-grave" waste management system in the State of California for handling hazardous wastes in a manner that protects human health and the environment and would reduce potential resulting impacts. The law specifies that generators have the primary duty to determine whether their waste is hazardous and to ensure proper management. The Hazardous Waste Control Law also establishes criteria for the reuse and recycling of hazardous waste used or reused as raw materials. The law exceeds federal requirements by mandating source reduction planning, and a

much broader requirement for permitting facilities that treat hazardous waste. It also regulates a number of types of waste and waste management activities that are not covered by federal law.

California Health and Safety Code

The California Health and Safety Code (HSC § 25141) defines hazardous waste as a waste or combination of waste that may:

> . . . because of its quantity, concentration, or physical, chemical, or infection characteristics:
> (1) Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitation-reversible illness.
> (2) Pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of or otherwise managed.

These regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management practices for hazardous wastes; establish permit requirements for hazardous-waste treatment, storage, disposal, and transportation; and identify hazardous waste that commonly would be disposed of in landfills.

Under both the RCRA and HWCL, hazardous-waste manifests must be retained by the generator for a minimum of 3 years. The generator must match copies of the manifests with copies of manifest receipts from the treatment, disposal, or recycling facility.

In accordance with Chapter 6.11 of the California Health and Safety Code (HSC § 25404, et seq.), local regulatory agencies enforce many federal and State regulatory programs through the Certified Unified Program Agencies program, including:

- Hazardous Materials Business Plans (HMBPs) (HSC § 25501, *et seq*.);
- State Uniform Fire Code (UFC) requirements (UFC § 80.103, as adopted by the State Fire Marshal pursuant to HSC § 13143.9);
- Underground Storage Tanks (USTs) (HSC § 25280, *et seq*.);
- Aboveground storage tanks (HSC § 25270.5[c]); and
- Hazardous-waste-generator requirements (HSC § 25100, et *s*eq.).

Contra Costa Health Services is the CUPA for Contra Costa County. As the CUPA, Contra Costa Health Services enforces State statutes and regulations through the Hazardous Materials Unified Program Agency (HMUPA). The HMUPA oversees aboveground petroleum tanks; generation of hazardous materials; storage and treatment; USTs; generation of medical waste; the accidental-release prevention program; and the Local Oversight Program, which interfaces with the State Water Board and the San Francisco Bay RWQCB on LUSTs and UST release sites. An HMBP must be submitted if a

facility ever handles any individual hazardous material in an aggregate amount equal to or greater than 55 gallons (liquids), 500 pounds (solids), or 200 cubic feet (gases). An HMBP must include:

- Details that include facility floor plans and identify the business conducted at the site;
- An inventory of hazardous materials handled or stored on the site;
- An emergency response plan; and

A training program in safety procedures and emergency response for new employees who may handle hazardous materials, with an annual refresher course in the same topics for those same employees.

California Code of Regulations, Title 8

The California Division of Occupational Safety and Health (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations. These regulations concern the use of hazardous materials in the workplace, including requirements for employee safety training; availability of safety equipment; accident and illness prevention programs; hazardous-substance exposure warnings; and preparation of emergency action and fire prevention plans.

Cal/OSHA also enforces hazard communication program regulations, including procedures for identifying and labeling hazardous substances, and requires that safety data sheets (formerly known as material safety data sheets) be available for employee information and training programs. Cal/OSHA standards are generally more stringent than federal regulations. Construction workers and operational employees within the plan area would be subject to these requirements.

California Code of Regulations, Title 8, Section 1529 authorizes Cal/OSHA to implement the survey requirements of CFR Title 29 relating to asbestos. These federal and state regulations require facilities to take all necessary precautions to protect employees and the public from exposure to asbestos. Workers who conduct asbestos abatement must be trained in accordance with federal and State OSHA requirements. The BAAQMD oversees the removal of regulated asbestos-containing materials (see "Asbestos Demolition, Renovation, and Manufacturing Rule" below).

California Code of Regulations Title 8, Section 1532.1 includes requirements to manage and control exposure to lead-based paint. These regulations cover the demolition, removal, cleanup, transportation, storage, and disposal of lead-containing material. The regulations outline the permissible exposure limit, protective measures, monitoring, and compliance to ensure the safety of construction workers exposed to lead-based material. Loose and peeling lead-based paint must be disposed of as a State and/or federal hazardous waste if the concentration of lead equals or exceeds applicable hazardous waste thresholds. Federal and State OSHA regulations require a supervisor who is certified with respect to identifying existing and predictable lead hazards to oversee air monitoring and other protective measures during demolition activities in areas where lead-based paint may be present. Special protective measures and notification of Cal/OSHA are required for highly hazardous construction tasks related to lead, such as manual demolition, abrasive blasting, welding, cutting, or torch burning of structures, where lead-based paint is present.

California Code of Regulations Title 22, Division 4.5

California Code of Regulations Title 22, Division 4.5 contains the Environmental Health Standards for the Management of Hazardous Waste, which includes California waste identification and classification regulations. California Code of Regulations Title 22, Chapter 11, Article 3, "Soluble Threshold Limits Concentrations/Total Threshold Limits Concentration Regulatory Limits," identifies the concentrations at which soil is determined to be a California hazardous waste. California's Universal Waste Rule (22 CCR § 66273) provides an alternative set of management standards in lieu of regulation as hazardous wastes for certain common hazardous wastes, as defined in 22 California Code of Regulations Section 66261.9. Universal wastes include fluorescent lamps, mercury thermostats, and other mercury-containing equipment. Existing structures may contain fluorescent light ballasts that could contain mercury or lead. The Alternative Management Standards for Treated Wood Waste (22 CCR § 67386) were developed by DTSC to allow for disposal of treated wood as a nonhazardous waste, to simplify and facilitate the safe and economical disposal of such waste. Chemically treated wood can contain elevated levels of hazardous chemicals (e.g., arsenic, chromium, copper, pentachlorophenol, or creosote) that equal or exceed applicable hazardous waste thresholds. The Alternative Management Standards provide for less stringent storage requirements and extended accumulation periods, allow shipments without a hazardous waste manifest and a hazardous waste hauler, and allow disposal at specific nonhazardous waste landfills.

Porter-Cologne Act

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act) is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt water quality control plans (also known as basin plans) for all areas of the region and establish water quality objectives in the plans. The Porter-Cologne Act sets forth the obligations of the State Water Board and RWQCBs to adopt and periodically update water quality control plans that recognize and reflect the differences in existing water quality, the beneficial uses of the region's groundwater and surface water, and local water quality conditions and problems. It also authorizes the State Water Board and RWQCBs to issue and enforce waste discharge requirements and to implement programs for controlling pollution in State waters. Finally, the Porter-Cologne Act also authorizes the State Water Board and RWQCBs to oversee site investigation and cleanup for unauthorized releases of pollutants to soils and groundwater and in some cases to surface waters or sediments.

California Emergency Response Plan

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Responding to hazardous-materials incidents is one part of this plan. The plan is administered by the California Governor's Office of Emergency Services, which coordinates the responses of other agencies. When the City of Pleasant Hill experiences an emergency, an Emergency Operations Center (EOC) may be opened. In the event an EOC is opened, emergency response team members coordinate efforts and work with local fire and police agencies, emergency medical providers, the California Highway Patrol, CAL FIRE, California Department of Fish and Wildlife (CDFW), and California Department of Transportation (Caltrans).

California Department of Forestry and Fire Protection Threat Potential Mapping

CAL FIRE has mapped fire threat potential throughout California. CAL FIRE maps fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The threat levels include no fire threat, moderate, high, and very high fire threat. Further, the maps designate the City of Pleasant Hill as the Local Responsibility Area for the plan area. Additionally, CAL FIRE produced a 2010 Strategic Fire Plan for California, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments. The CAL FIRE Office of the State Fire Marshal provides oversight of enforcement of the California Fire Code as well as overseeing hazardous liquid pipeline safety.

California Building Code

The State of California provided a minimum standard for building design through the 2016 California Building Standards Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations. The 2016 CBC is based on the 2015 International Building Code, but has been modified for California conditions. It is generally adopted on a jurisdiction by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local City and County building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the installation of sprinklers in all new high-rise buildings and residential buildings; the establishment of fire resistance standards for fire doors, building material; and particular types of construction.

California Public Resources Code

The California Public Resources Code (PRC) includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors[20] on construction equipment that use an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on-site for various types of work in fire-prone areas.

These regulations include the following:

- Earthmoving and portable equipment with internal combustion engines would be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC § 4442);
- Appropriate fire suppression equipment would be maintained during the highest fire danger period—from April 1 to December 1 (PRC § 4428);
- On days when a burning permit is required, flammable materials would be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor would maintain the appropriate fire suppression equipment (PRC § 4427); and
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines would not be used within 25 feet of any flammable materials (PRC § 4431).

[20] A spark arrester is any device that prevents the emission of flammable debris from combustion sources, such as internal combustion engines, fireplaces, and wood burning stoves.

Regional

BAAQMD Asbestos Demolition, Renovation and Manufacturing Rule

The removal of asbestos-containing building materials is subject to the limitations of BAAQMD Regulation 11, Rule 2, "Hazardous Materials; Asbestos Demolition, Renovation and Manufacturing." This rule prohibits visible emissions to outside air from any operation involving the demolition of any structure containing asbestos, and sets out requirements for demolition of such structures, including a pre-demolition survey conducted by a certified professional. All friable (i.e., crushable by hand) asbestos-containing materials or nonfriable asbestos-containing materials that may be damaged must be abated before demolition in accordance with applicable requirements. Friable asbestos-containing materials must be disposed of as asbestos waste at an approved facility. Nonfriable asbestos-containing materials may be disposed of as nonhazardous waste at landfills that accept such wastes.

Association of Bay Area Governments Hazard Mitigation Plan

The Association of Bay Area Governments' multijurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area was updated in 2010 in partnership with Bay Conservation and Development Commission Adapting to Rising Tides Program to support local governments in the regional plan for existing and future hazards of climate change. This detailed 5-year plan identifies potential natural and human-made hazards, assesses their potential risks, and includes mitigation methods to reduce risks. The potential hazards identified in the Plan include earthquakes and liquefaction, wildfires, floods, drought, solar storms, dam or levee failure, disease outbreak, freezes, wind, heat, thunder and lightning storms, siltation, tornadoes, hazardous materials, slope failure and mudflows, and other hazards. Similarly, mitigation measures include hazard event planning, emergency preparedness coordination, education, facility upgrades, and monitoring actions.

Contra Costa County Hazard Mitigation Plan

The Contra Costa County Hazard Mitigation Plan (HMP) contains goals and objectives that are intended to reduce loss of life and property from natural disasters.[21] During the planning process, this plan used Federal Emergency Management Agency (FEMA) tools to determine the most likely possible threats would be earthquakes, flooding, landslides, tsunamis, and wildfires in urban interface zones. The HMP identifies mitigation action items that aim to meet objectives and reduce the impacts of these hazards. The Contra Costa County Office of Emergency Services and Contra Costa County Department of Conservation and Development share the lead responsibility for overseeing the Plan implementation and maintenance strategy. Plan implementation and evaluation will be a shared responsibility among all planning partnership members and agencies identified as lead agencies in the mitigation action plans.

Contra Costa County Emergency Operations Plan

The purpose of the Contra Costa County Operational Area (OA) Emergency Operations Plan (EOP) is to provide the basis for a coordinated response before, during, and after an emergency affecting Contra Costa County.[22] The emergency operations plan identifies and facilitates inter-agency coordination in emergency operations. The Plan applies to all emergencies in unincorporated areas

[21] Tetra Tech. 2018. Contra Costa County Hazard Mitigation Plan.
[22] Contra Costa County. 2015. Emergency Operations Plan.

of Contra Costa County and within incorporated areas when those emergencies require multi-agency coordination at the operational area level.

Contra Costa Household Hazardous Waste Program

Contra Costa County operates three drop-off locations in the western portion, central portion, and eastern portion of the county. The three facilities allow for residents and qualified small businesses to drop off accepted hazardous waste. Hazardous waste that is accepted includes chemical bottles, acids and caustics, batteries, light bulbs, motor oil, pesticides, and solvents.[23]

Contra Costa County Ordinance Code

Division 450, Hazardous Materials and Wastes, of the Contra Costa County Ordinance Code provides regulations regarding hazardous material response plans, inventories, underground storage, and risk management. In part, this County Ordinance Code division requires that any business that handles a specific quantity of hazardous materials establish a business plan for emergency response to a release or threatened release of a hazardous material.

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Responding to hazardous-materials incidents is one part of this plan. The plan is administered by the California Governor's Office of Emergency Services, which coordinates the responses of other agencies. The Contra Costa County Office of the Sheriff: Emergency Services Division coordinates response to emergencies in the County. Emergency response team members respond and work with local fire and police agencies, emergency medical providers, the California Highway Patrol, CAL FIRE, CDFW, and Caltrans.

Local

City of Pleasant Hill 2003 General Plan

Noise and Safety Element

The Pleasant Hill 2003 General Plan establishes the following goals and policies related to hazards and hazardous materials that are relevant to this analysis:

Safety and Noise Goals, Policies, and Programs

- **Goal 5:** Avoid exposure to hazardous substances.
- **Policy 5a:** The City shall adequately monitor and regulate hazardous materials.
- **Program 5.1:** The City shall identify and require businesses that use, store, dispose of, or transport hazardous materials to ensure that adequate measures are taken to protect public health and safety.
- **Program 5.2:** The City shall work with appropriate agencies to require all transport of hazardous materials to follow approved routes.
- **Goal 6:** Work to ensure a drinking water supply free from contamination.
- **Policy 6A:** The City shall assist in the protection and monitoring of water quality.
- **Program 6.1:** The City shall encourage water suppliers to comply with applicable State and federal provisions.
- **Program 6.2:** The City shall work with water suppliers and jurisdictional agencies during the environmental review process for new development to prevent contamination of water supplies.

[23] Contra Costa County. 2018. Website: http://www.co.contra-costa.ca.us/depart/cd/recycle/options/v5951.htm

3.7.4 - Impacts and Mitigation Measures

Significance Criteria

According to 2019 CEQA Guidelines Appendix G, to determine whether impacts related to hazards and hazardous materials have significant environmental effects, the following questions are analyzed and evaluated. Would the proposed plan:

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 likely release of hazardous materials into the environment?

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25-mile of an existing or proposed school?

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e) Be 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 and result in a safety hazard or excessive noise for people residing or working the plan 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?

If located in or near State responsibility areas or lands classified as Very High Fire Hazard Severity Zones, would the proposed plan:

h) Substantially impair an adopted emergency response plan or emergency evacuation plan?

i) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

j) 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?

k) 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?

Approach to Analysis

This evaluation focuses on whether the proposed plan would result in changes to the physical environment that would cause or exacerbate adverse effects related to the use, transportation, disposal, accidental release, or emission of hazardous materials. The evaluation also includes a determination of whether the changes to the physical environment caused by the proposed plan would impair or interfere with emergency response plans, or expose people or structures to increased wildfire hazards or dangers from overhead power lines. To evaluate potential construction-related and operational impacts from existing hazardous materials in soils, sediments, groundwater, surface water, and structures, the results of environmental sampling are compared to identified screening levels. The following analysis is based, in part, on information provided by the Pleasant Hill 2003 General Plan, the Civic Project-site-specific ESA (G.2), the Residential Project-site-specific ESA and asbestos and lead-based paint sampling report (G.1), and State of California websites.

As discussed above, the plan area is not located within or near a State responsibility area. With respect to a Local Responsibility Area, the closest designated "High" fire hazard zone is located approximately 1.3 miles to the west of the plan area. Because of the plan area's proximity to a designated "High" fire hazard zone within a Local Responsibility Area, this evaluation focuses on whether the proposed plan would result in changes to the physical environment that would cause or exacerbate adverse effects related to wildfires or whether the proposed plan would be placed in a location susceptible to wildfire or post-wildfire conditions. The evaluation also includes a determination of whether the changes to the physical environment caused by the proposed plan would impair or interfere with emergency response plans, expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, expose people/structures to downslope flooding or landslides, or include the installation or maintenance of associated infrastructure. The following analysis is based, in part, on information provided by the Pleasant Hill 2003 General Plan, the CAL FIRE website, and correspondence with the CCCFPD.

Additional analyses regarding hazards and health risk related to emissions of toxic air contaminants are addressed in Section 3.2, Air Quality. Flooding and inundation hazards, including those related to erosion and mudflow, are addressed in Section 3.8, Hydrology and Water Quality. Traffic-related safety hazards are addressed in Section 3.14, Transportation. Other geotechnical-related safety hazards, such as earthquakes, are addressed in Section 3.5, Geology and Soils.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of hazards and hazardous materials impacts resulting from implementation of the proposed plan.

- Routine transport, use, and/or dispose of hazardous materials.
- Regular transport of hazardous materials to/from the plan area on an unsuitable road or use of highly volatile hazardous materials.
- Location within 0.25 mile of an existing or proposed school in conjunction with hazardous emissions or handle hazardous materials, waste, or substances.

- Location on a hazardous materials sites lists such as the California Environmental Protection Agency (Cal/EPA), State Water Board, California Facility Inventory Database (CA FID) UST and State Water Efficiency and Enhancement Program (SWEEP), HAZNET, DTSC EnviroStor, BAAQMD, and/or the State Water Board GeoTracker regulated facilities databases for files related to possible Recognized Environmental Conditions (RECs).
- Location within an airport land use plan or within 2 miles of a public airport and reduction of safety of people working or residing in the area.
- Impairing implementation of or interfere with an adopted emergency response plan or emergency evacuation plan via blockage of an evacuation route or provision of only one access point for emergency vehicles.
- Placement of housing or offices in a designated wildland fire urban interface zone or proximate to unmanaged open space area that is susceptible to wildfires.
- Impaired implementation of or interference with an adopted emergency response plan or emergency evacuation plan via blockage of an evacuation route or provision of only one access point for emergency vehicles.
- Location in or near area of steep slopes, high-wind areas, or historical wildfire burn areas leading to greater wildfire risk and, thereby, exposing occupants to smoke and other wildfire-related air pollutants.
- Installation or maintenance of roads, fuel breaks, emergency water sources, electrical power lines, or natural gas lines that may exacerbate fire risk.
- Location in or near area of wildfire-scarred slopes or altered drainage areas and, thereby, exposing occupants to flooding and landslide hazards.

Impact Evaluation

Routine Transport, Use, or Disposal of Hazardous Materials

Impact HAZ-1:	**The proposed plan would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**

Construction

Civic Project and Residential Project

During construction, implementation of the proposed plan would involve the routine transport, use, and disposal of hazardous materials, such as diesel fuels, aerosols, and paints. However, the duration of these actions would only be temporary and limited to the period of construction of the Civic Project and the Residential Project. Furthermore, the proposed plan would be subject to the Hazardous Materials Transport Act, California Public Resources Code, and other State and local regulations that would reduce and limit the associated risks. As a result, construction impacts related to routine hazardous materials transport, use, and disposal risk would be less than significant.

Operation

Civic Project

During operation of the proposed new park and associated athletic fields, hazardous substances, such as herbicides for landscaping, would be expected to be used and stored on-site. Similar to typical operations at other local City parks, these substances would be used and stored according to all applicable federal, State, regional, and local regulations listed previously. During operation of the proposed library, hazardous building materials, hazardous substances, or hazardous waste, such as herbicides for landscaping, would not be used, stored, or transported in quantities sufficient to create a significant hazard to the public. Because it would comply with all applicable federal, State, regional, and local regulations, the Civic Project would result in a less than significant operational impact with regard to creation of public hazards as a result of the routine transport, use, or dispose of hazardous building materials, hazardous substances, or hazardous waste.

Residential Project

Hazardous building materials, hazardous substances, or hazardous waste, such as herbicides for landscaping, would not be used, stored, or transported in quantities sufficient to create a significant hazard to the public. Therefore, operational impacts related to routine hazardous materials transport, use, and disposal risk would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Hazardous Materials Upset Risk

Impact HAZ-2:	**The proposed plan could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.**

Construction

Civic Project

As described previously, construction activity would be expected to involve the transport, use, and disposal of hazardous materials, such as diesel fuels, aerosols, and paints. However, the duration of these actions would only be temporary and limited to the period of construction. In addition, the use of these materials would be subject to the Hazardous Materials Transport Act, California Public Resources Code, and other State and local regulations that would limit the use of hazardous materials and reduce the associated risks of exposure.

The Phase I ESA completed for 1700 Oak Park Boulevard (Appendix G.1) noted that, at the time of the geotechnical exploration performed by ENGEO in February 2018, discoloration/staining and olfactory evidence of petroleum-impacted material was noted in a soil core retrieved from a soil boring advanced within close proximity of the existing sewer line. The petroleum impact was noted at a depth of approximately 24 feet below the ground surface. No other soil borings advanced across the Property or recovered samples exhibited olfactory evidence of petroleum impact. The potential source of impact may have been derived from a leak in the existing sewer line. The Phase I ESA recommended Phase II ESA sampling, including soil and soil vapor sampling, be performed to

further define and delineate the extent of subsurface impact. As discussed in the Phase II ESA sampling report prepared by ENGEO, dated December 19, 2018, Phase II ESA sampling was completed to characterize potential subsurface conditions. The Phase II ESA activities included the creation of four test pits and the collection of 15 soil samples along Oak Park Boulevard and Monticello Avenue. The test pits were observed by an environmental professional who confirmed that the pits contained no evidence of debris or staining. Analysis of the soil samples confirmed that all detectable concentrations of lead are below DTSC ESL for residential land use, and are within typical within ambient ESL for soil and groundwater. No further action is required.

Residential Project

The Phase I ESA completed for 1750 Oak Park Boulevard (Appendix G.1) concluded that due to the age of existing buildings proposed for demolition, there is potential presence of asbestos-containing materials and lead-based paint in the building materials. This represents a potentially significant risk during demolition.

This Phase I ESA recommends that the on-site buildings be surveyed for asbestos-containing material and lead-based paint and that all identified materials be removed and disposed of in accordance with state regulations prior to initiation of demolition. Stockton Environmental, Inc. completed an asbestos and lead based paint survey on March 10, 2019 and determined that the existing library contains both asbestos-containing materials and lead-based paint. The Asbestos and Lead Based Paint Sampling Report[24] is included in Appendix G.2. With respect to asbestos-containing materials, implementation of Mitigation Measure (MM) HAZ-2a would require the applicant to develop an abatement plan and remove all asbestos-containing materials prior to demolition. With respect to lead-based paint, MM HAZ-2b would require demolition activities to be completed in accordance with California Code of Regulations, Title 17, Division 1, Chapter 8, Article 1, which provides protection for construction workers from lead-based paint. Implementation of MM HAZ-2a and MM HAZ-2b would ensure that any asbestos-containing materials and lead-based paint would be removed by properly licensed abatement contractors and that construction impacts related to hazardous materials upset risk would be reduced to less than significant.

Operation

Civic Project and Residential Project

None of the proposed uses would involve the type or quantity of hazardous materials that could pose a significant environmental accident. In addition, the Household Hazardous Waste Program offers recycling services for diesel fuels, aerosols, and paints and other household hazardous materials for the proposed residences. These services are offered free to the public and at a fee for businesses. Therefore, operational impacts related to hazardous materials upset risk would be less than significant.

Level of Significance Before Mitigation

Less Than Significant (Civic Project)

Potentially Significant (Residential Project)

[24] Stock Environmental Inc. (prepared for Environmental Assessment Specialist, Inc.). 2019. Asbestos and Lead Based Paint Sampling Report. March 22.

Mitigation Measures

MM HAZ-2a Removal of Asbestos-Containing Material Prior to Demolition

Residential Project: Prior to the issuance of a demolition permit for the existing library buildings, the project sponsor for the Residential Project shall (1) hire a California Registered Asbestos Abatement Contract to remove all asbestos containing materials, prior to impacting them, and (2) conduct Final Clearance inspections (visual) to document the completion of the resource action. If suspect materials, not discussed in the Asbestos and Lead Based Paint Sampling Report dated March 22, 2019, are discovered during future demolition operations, all general work activities which could impact the discovered suspect asbestos-containing material should cease until confirmation sampling can be conducted.

MM HAZ-2b Removal of Lead-Based Paint During Demolition

Residential Project: During demolition, the project sponsor for the Residential Project shall complete demolition activities in accordance with California Code of Regulations Title 17, Division 1, Chapter 8, Article 1. All construction work where an employee may be occupationally exposed to lead-containing paint, including demolition, must comply with the OSHA Regulation 29 Code of Federal Regulations 1926.62, and Cal-OSHA Title 8 California Code of Regulations 1523.1. If suspect painted surfaces, not discussed in the Asbestos and Lead Based Paint Sampling Report dated March 22, 2019, are discovered during future demolition operations, all general work activities which could impact the discovered painted surface should cease until confirmation sampling can be conducted.

Level of Significance After Mitigation

Less Than Significant (Civic Project)

Less Than Significant with Mitigation (Residential Project)

Hazardous Emissions Proximate to a School

Impact HAZ-3:	**The proposed plan would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.**

Construction

Civic Project and Residential Project

The closest school to the plan area is Pleasant Hill Middle School, located on the parcel directly adjacent to the north of the plan area. Specifically, the nearest school building to the plan area is located approximately 550 feet to the north on Monticello Avenue. As discussed under Impact HAZ-1, the Civic Project and Residential Project would use hazardous materials, such as diesel fuels, aerosols, and paints, during construction. As a result, construction would involve handling hazardous materials within 0.25-mile of a school. However, the duration of these actions would be temporary and would be limited to the period of construction. Furthermore, construction would be

subject to the Hazardous Materials Transport Act, California Public Resources Code, and other State and local regulations, such as the Household Hazardous Waste Program, that would reduce and limit the associated risks. As a result, construction impacts related to hazardous emissions proximate to a school risk would be less than significant.

Operation

Civic Project and Residential Project

The plan area is located within 0.25 mile of a school. Because the proposed uses (residential, park, and library) do not typically utilize hazardous materials, it is not anticipated that the proposed plan would emit hazardous materials or result in the handling of such materials. In addition, the proposed plan does not include industrial or commercial land uses that typically use or emit hazardous substances and materials. Therefore, operational impacts related to the risk of hazardous emissions proximate to a school would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Government Code Section 65962.5 Sites

Impact HAZ-4:	**The proposed plan would not be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment.**

Construction

Civic Project and Residential Project

Impacts related to locating buildings within the plan area on a hazardous materials site per Government Code Section 65962.5 are limited to operational impacts. No respective construction impacts would occur.

Operation

Civic Project and Residential Project

A regulatory records review of the Cal/EPA, State Water Board, CA FID UST and SWEEPS, HAZNET, DTSC EnviroStor, BAAQMD, and GeoTracker regulated facilities databases for files related to possible RECs was conducted for the plan area. Based on the findings of the project-specific Phase I ESAs (Appendix G.1 and Appendix G.3), no RECs, no historical RECs, and no controlled RECs were identified for the plan area. Thus, the plan area is not located on any hazardous materials sites compiled pursuant to Government Code Section 65962.5. The proposed plan would not create a hazard to the public or environment during operation, and impacts would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Proximity to Airport Safety Hazard

Impact HAZ-5:	**The proposed plan would not be 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 and result in a safety hazard for people residing or working the project area.**

Construction

Civic Project and Residential Project

Impacts related to exposure of people to safety hazards or excessive noise in proximity to an airport are limited to operational impacts. No respective construction impacts would occur.

Operation

Civic Project and Residential Project

The plan area is not located within an airport land use plan or within 2 miles of a public airport. The closest public airport to the plan area is Buchanan Field, located approximately 3.2 miles to the northwest. Therefore, the proposed plan would not result in any operational impact related to exposure of people to safety hazards or excessive noise in proximity to an airport.

Level of Significance

No Impact (Civic Project and Residential Project)

Emergency Response and Evacuation

Impact HAZ-6:	**The proposed plan would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

Construction

Civic Project and Residential Project

During construction, it is expected that construction equipment and vehicles would be accessing and leaving the plan area, which in turn could potentially impede evacuation or emergency vehicle access. However, as discussed under Impact TRANS-4 in Section 3.14, Transportation, the proposed plan would result in less than significant impacts related to emergency vehicle access. In addition, the proposed plan would comply with the Contra Costa County Emergency Plan, ensuring efficient response to emergency incidents associated with emergencies affecting the City. Finally, MM TRANS-1a requires the preparation of a construction management plan to ensure adequate circulation and access throughout the construction period. Therefore, construction impacts related to emergency response and evacuation would be less than significant.

Operation

Civic Project and Residential Project

The Contra Costa County EOP outlines general procedures in response to emergency crises, such as evacuations. Included in the Contra Costa County EOP is information regarding evacuations and shelter-in-place orders as well as who has the authority to issue these orders. The main arterial roads into and out of the City of Pleasant Hill would be Taylor Road, Gregory Lane, Boyd Road, and Oak Park Boulevard in the east-west direction and Pleasant Hill Road and I-680 in the north-south direction. These roads would act as the main evacuation route into and out of the City. With

adherence to Pleasant Hill 2003 General Plan policies, the proposed plan would not conflict with the EOP or Pleasant Hill 2003 General Plan safety goals.

As indicated in Section 3.10, Public Services, the plan area would be adequately served by police and fire services. The proposed plan would not create a permanent increase in population unaccounted for in the Pleasant Hill 2003 General Plan that could lead to overwhelming call for services. In addition, the Civic Project and Residential Project would be designed in accordance with the City's standards to accommodate emergency vehicle access by providing two points of access at all buildings. Therefore, operational impacts related to emergency response and evacuation would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Wildland Fires

Impact HAZ-7:	**The proposed plan would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.**

Because of the recent wildfires in California, wildland fire impacts have been analyzed in extreme detail. As described in "Approach to Analysis," this impact analysis focuses on whether the proposed plan would cause or exacerbate adverse effects related to wildfires or whether the proposed plan would be placed in a location susceptible to wildfire or post-wildfire conditions. As the plan area is located in an urban area, this analysis is included out of an abundance of caution.

Construction

Civic Project and Residential Project

Impacts related to wildland fire hazard risks are limited to operational impacts. No respective construction impacts would occur.

Operation

Civic Project and Residential Project

The plan area is located in the southeast area of the City of Pleasant Hill, and does not contain steep terrain nor is it surrounded by unmanaged open space areas. The closest open space area is located approximately 2.1 miles to the west of the plan area. According to CAL FIRE, the plan area is not located in a Severe or Very High Fire Hazard Severity Zone; the closest "High" fire hazard zone is located approximately 1.3 miles to the west across Taylor Road. The BAAQMD monitors the Bay Area's air quality at a number of stations, and the closest station to the plan area is located in the City of Concord, approximately 2.24 miles to the east. According to BAAQMD the average wind speed for Concord varies month to month and ranges from 10 to 17 mph.[25] Given that the southeast area of the City of Pleasant Hill is not located in steep terrain surrounded by natural vegetation nor does it consistently experience high winds, the plan area would be not be substantially prone to wildfires.

[25] Bay Area Air Quality Management District (BAAQMD). Air Monitoring Data. Accessed September 28, 2018. http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data?DataViewFormat=yearly&DataView=met&StartDate=12/11/2017&ParameterId=203&StationId=4902

Furthermore, compliance with applicable State and local plans and regulations would decrease the risk of impacts related to wildland fire hazards. Specifically, Contra Costa County General Plan policies incorporate requirements for fire-safe construction into the land use planning and approval process and ensure special fire protection for high-risk land uses and structures. Contra Costa County also implements the Contra Costa OA EOP, which addresses the response to emergency incidents associated with emergencies affecting Contra Costa County. Furthermore, proposed structures would be required to comply with the California Fire Code with regard to emergency/fire access and types of building materials. Therefore, operational impacts related to wildland fires risk would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Emergency Response/Evacuation Plan Consistency

Impact HAZ-8: The proposed plan would not substantially impair an adopted emergency response plan or emergency evacuation plan.

Construction

Civic Project and Residential Project

During construction, it is expected that construction equipment and vehicles would be accessing and leaving the plan area, which in turn could potentially impede evacuation or emergency vehicle access. However, as discussed under Section 3.14, Transportation, the proposed plan would result in less than significant impacts related to emergency vehicle access. In addition, the proposed plan would be in compliance with the Contra Costa County Emergency Plan, ensuring efficient response to emergency incidents associated with emergencies affecting the City of Pleasant Hill. Furthermore, blockage of an evacuation route would not occur during construction because heavy construction equipment would be staged on-site and all delivery trucks would use designated truck routes. Therefore, construction impacts related to emergency response/evacuation plan consistency would be less than significant.

Operation

Civic Project and Residential Project

As indicated in Section 3.11, Public Services, the proposed plan would be adequately served by police and fire services, including respective evacuation or emergency vehicle access. The proposed plan would not create a permanent increase in population unaccounted for in the Pleasant Hill 2003 General Plan that could lead to overwhelming call for emergency services. In addition, structures would be designed in accordance with the City's standards to accommodate emergency vehicle access by providing two points of access available to emergency vehicles. Furthermore, blockage of an evacuation route would not occur during proposed plan operation because the proposed plan does not propose roadway closures or new infrastructure that would block evacuation routes. With adherence to Pleasant Hill 2003 General Plan policies, the proposed plan would not conflict with the EOP or the Pleasant Hill 2003 General Plan safety goals. Therefore, operational impacts related to emergency response/evacuation plan consistency would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Expose Project Occupants to Pollutant Concentrations from Wildfire

Impact HAZ-9:	**Due to slope, prevailing winds, and other factors, the proposed plan would not exacerbate wildfire risks and thereby expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.**

Construction

Civic Project and Residential Project

Impacts related to exposure of occupants to pollutants concentrations from a wildfire are limited to operational impacts. No respective construction impacts would occur.

Operation

Civic Project and Residential Project

The plan area is located in the central portion of Contra Costa County and the southeastern area of Pleasant Hill. The area surrounding the plan area consists of urban development, parkland, and creek and trail corridor areas without steep terrain or unmanaged open space areas prone to wildfires. The closest open space area is located approximately 2.1 miles to the west of the plan area. The BAAQMD monitors the Bay Area's air quality at a number of stations. The closest air quality data monitoring station is located in the City of Concord, approximately 2.24 miles to the east. According to the BAAQMD the average wind speed for Concord varies month to month and ranges from 10 to 17 mph.[26] In addition, the plan area has not previously experienced wildfire. Given that the southeast area of the City of Pleasant Hill is not located in or near an area of steep terrain or historical wildfire burn nor experiences consistent high winds, the plan area would not be prone to wildfire risks.

According to CAL FIRE, the plan area is not located in a Severe or Very High Fire Hazard Severity Zone. The closest "High" fire hazard zone is located approximately 1.3 miles to the west across Taylor Road. In addition, as indicated in Section 3.11, Public Services, the proposed plan would be adequately served in terms of fire protection services by CCCFPD. The CCCFPD was contacted in order to receive their input on wildfire risks associated with the proposed plan. Tracie Dutter, Fire Prevention Captain, at the CCCFPD[27] determined that the proposed plan would not be exposed to any wildfire risks. Furthermore, proposed structures would be required to comply with the California Fire Code with regard to emergency/fire access and use of building materials that would limit the spread of wildfire to the greatest extent possible. Therefore, impacts related to exposure of occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

[26] Bay Area Air Quality Management District (BAAQMD). Air Monitoring Data. Accessed September 28, 2018. http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data?DataViewFormat=yearly&DataView=met&StartDate=12/11/2017&ParameterId=203&StationId=4902

[27] Tracie Dutter. Contra Costa County Fire Protection District, Fire Prevention Captain. Personal communication: email. February 8, 2019.

Infrastructure That Exacerbates Wildfire Risk

Impact HAZ-10: **The proposed plan would not 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.**

Construction

Civic Project and Residential Project

Impacts related to installation or maintenance of infrastructure (such as roads, fuel breaks, emergency water sources, electrical power lines or natural gas lines) that may exacerbate fire risk are limited to operational impacts. No respective construction impacts related to infrastructure that exacerbates fire risk would occur.

Operation

Civic Project and Residential Project

The proposed plan would include adequate emergency access via existing roads at two access points. The proposed plan would not require the installation of firebreaks, because it is in an urban area surrounded by existing development with little natural vegetation. The proposed plan would not require emergency water sources, because potable water is currently provided by the Contra Costa Water District, which has adequate water supplies available to serve development associated with the proposed plan and future development during normal, dry, and multiple dry years (see Section 3.15, Utilities and Service Systems). New electrical power and natural gas lines on and connecting to the plan area would be installed below ground and existing overhead electrical power lines along Monticello Avenue and Oak Park Boulevard would be undergrounded, minimizing potential ignition and related fire risk above ground within the plan area in accordance with all applicable federal, State, and local regulations including the California Building Code and City Municipal Code. Therefore, impacts related to infrastructure that exacerbates fire risk would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

Flooding and Landslide Hazards Due To Post-fire Slope Instability/Drainage Changes

Impact HAZ-11: **The proposed plan would not 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.**

Construction

Residential Project

Impacts related to post-fire slope instability are limited to operational impacts. No respective construction impacts related to flooding and landslide hazards due to post-fire slope instability or drainage changes would occur with construction of the Residential Project.

Civic Project

Impacts related to post-fire slope instability are limited to operational impacts. No respective construction impacts related to flooding and landslide hazards due to post-fire slope instability or drainage changes would occur. Refer to Impact HYD-3 in Section 3.8, Hydrology and Water Quality, for discussion of flooding due to proposed changes in drainage conditions.

Operation

Civic Project and Residential Project

The plan area is not located on or near steep slopes susceptible to landslides or downstream flooding. The plan area has also not been affected by previous wildfires that could have resulted in drainage changes or loss of vegetation. In addition, correspondence with the CCCFPD confirmed that the proposed plan would not expose people or structures to significant risks due to post-fire slope instability or drainage changes.[28] Therefore, impacts related to flooding and landslide hazards due to post-fire slope instability or drainage changes would be less than significant.

Level of Significance

Less Than Significant (Civic Project and Residential Project)

3.7.5 - Cumulative Impacts

The geographic scope of the cumulative hazards and hazardous materials cumulative analysis is the vicinity of the plan area or roughly the southeast area of Pleasant Hill. The cumulative projects included in this analysis are those listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, as well as the proposed plan.

Hazardous Materials Exposure Risk

In general, exposure to hazardous materials may cause localized adverse effects. A combination of federal, State, and local regulations limit or minimize the potential for exposure to hazardous materials. Developments listed in Table 3-1 consists predominantly of commercial educational, and residential developments. The types and sizes of development anticipated in the City of Pleasant Hill would not involve large quantities of hazardous materials or activities that transport or handle hazardous materials. In addition, there are no land uses in the vicinity of the plan area that are known to utilize large quantities of hazardous materials or involve hazardous activities.

However, development of projects listed in Table 3-1 may include demolition of structures that have the potential to contain hazardous building materials. Building materials may contain asbestos and lead-based paint. To address potential release of hazardous materials, the City would require applicants to assess structures and impose standard mitigation (required testing, removal, and proper disposal) to minimize release prior to any demolition. As such, there would be a less than significant cumulative impact associated with hazardous materials exposure risk.

[28] Contra Costa County Fire Protection District (CCCFPD). 2019. Email Correspondence with Todd Schiess, Fire Inspector I. January 4, 2019.

Hazards and Emergency Response

The City of Pleasant Hill contains main arterial streets that would act as the most likely routes out of the City and provide access to I-680.

The areas surrounding the plan area are characterized by urban development, which is not immediately adjacent to any wildlands. The cumulative projects, listed in Table 3-1, would result in predominantly in-fill development. Planned uses are contemplated in the Pleasant Hill 2003 General Plan and would not significantly increase emergency services, including wildfires. Furthermore, all construction would adhere to the City Building Codes that are designed to minimize the potential for uncontrolled fires. Once development is proposed, the City assesses the needs for fire protection services and informs efforts to improve or expand needed facilities.

As listed in Table 3-1, near-term development in the City would result in predominantly commercial, educational, and residential development. These types of development would increase population, including employees. The Pleasant Hill 2003 General Plan EIR acknowledges that future development in the southeast area of Pleasant Hill would result in increased population and would alter the existing street network. However, all development would comply with emergency access requirements as a condition of construction. Furthermore, the Pleasant Hill 2003 General Plan would not result in permanent road closures, not impede an established emergency access route, nor interfere with emergency response requirements. As such, there would be a less than significant cumulative impact associated with wildfire hazards and emergency response.

Wildfire Hazards and Emergency/Evacuation Response

A combination of federal, State, and local regulations limit or minimize the potential for exposure to wildfires by reducing the amount of development in wildland urban interface areas, ensuring new development is developed according to California Building Code and Uniform Fire Code, and incorporating requirements for fire-safe construction into the land use planning.

Development listed in Table 3-1 consists predominantly commercial, educational, and residential development. The types and sizes of development anticipated in Table 3-1 would not be located in designated and High or Very High Fire Hazard Zones. In addition, all projects in Table 3-1 would be located in areas that are already developed, do not contain significant levels of dry fuel susceptible to ignition, or significantly high average wind speed.

The cumulative projects, listed in Table 3-1, would result in predominantly in-fill development and would not significantly increase emergency services beyond the existing service area. Furthermore, all cumulative project construction would adhere to the City Building Codes that are designed to minimize the potential for uncontrolled fires. Adherence to City Building Codes would ensure that California Fire Code standards such as automatic sprinkler systems are included in development. In addition, as part of project approval for the cumulative projects, the City assesses the need for fire protection services, which informs efforts to improve or expand needed facilities. In addition, all development would comply with emergency access requirements, such as two emergency vehicle access points, as a condition of construction. Furthermore, the cumulative projects would not result in permanent road closures, nor impede an established emergency or evacuation access route, such

as I-680, or interfere with emergency response requirements, such as fire protection response time standards established by the Pleasant Hill 2003 General Plan. As such, there would be a less than significant cumulative impact associated with wildfire hazards and emergency/evacuation response.

Overall

With the implementation of the policy provisions and regulatory requirements, the proposed plan, in conjunction with cumulative projects, would not substantially contribute to a cumulatively considerable impact. The City would require development to mitigate potential impacts, which may include standard mitigation measures that would help ensure the safe transport, storage, use, and disposal of hazardous materials and wastes. Therefore, the proposed plan would not make a cumulatively considerable contribution to a cumulative impact.

Level of Cumulative Significance

Less Than Significant (Civic Project and Residential Project)

THIS PAGE INTENTIONALLY LEFT BLANK