

LAGUNA CLARA II PROJECT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADT	average daily traffic
ADWF	average dry-weather flow
afy	af per year
AQAPs	Air quality attainment plans
AMP	Archaeological Monitoring Plan
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
California DHS	California Department of Health Services
CAP	Climate Action Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH ₄	methane
City	City of Santa Clara
CMP	Congestion Management Plan
CNEL	community noise equivalent level
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CUPA	Certified Unified Program Agency
CVP	U.S. Bureau of Reclamation's Central Valley Project
CWA	Clean Water Act
dB	decibel
dBA	Construction Noise Levels by Phase
Department	Santa Clara Parks and Recreation Department
DOT	Department of Transportation
DTSC	California Department of Toxic Substances Control
EIR	environmental impact report

EO	Executive Order
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHSZs	Fire Hazard Severity Zones
General Plan	<i>City of Santa Clara 2010–2035 General Plan</i>
GHG	greenhouse gas
gpcd	gallons per capita per day
gpd	gallons per day
GWP	global warming potential
HCPs	habitat conservation plans
HFCs	Hydroflourocarbons
HRA	health risk assessment
HUD	Department of Housing and Urban Development
HVAC	heating, ventilation, and air-conditioning
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
IWMP	Santa Clara County's Integrated Waste Management Plan
LEED	Leadership in Energy and Environmental Design
LID	low-impact development
LRAs	Local Responsibility Areas
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MFA	Mitigation Fee Act
mg/m ³	milligrams per cubic meter
mgd	million gallons per day
Mission Trail	Mission Trail Waste System
MPO	Metropolitan Planning Organizations
MTC	Metropolitan Transportation Commission
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCCPs	natural community conservation plans
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls

PFCs	perfluorocarbons
PG&E	Pacific Gas & Electric
PI	Plasticity Index
PM2.5	particulate matter no more than 2.5microns in diameter
PM10	particulate matter no more than 10 microns in diameter
PPV	peak particle velocity
Project	Laguna Clara II Project
Project site	3131 Homestead Road
Project Sponsor	Equity Residential
Quimby	California Quimby Act
RCRA	Resource Conservation and Recovery Act of 1976
ROGs	reactive organic gases
RPS	Renewables Portfolio Standard
RTPs	Regional Transportation Plans
RWF	San Jose-Santa Clara Regional Wastewater Facility
SB	Senate Bill
SBWR	South Bay Water Recycling
SCFD	Santa Clara Fire Department
SCPD	Santa Clara Police Department
SCS	sustainable communities strategies
SCUSD	Santa Clara Unified School District
SCVWD	Santa Clara Valley Water District
sf	square feet
SF ₆	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFHA	Special Flood Hazard Area
SFPUC	San Francisco Public Utilities Commission
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SIL	significant impact level
SIP	State Implementation Plan
SLCP	Short-Lived Climate Pollutants
SLF	Sacred Lands File
SMARA	Surface Mining and Reclamation Act
SRAs	State Responsibility Areas
SVP	Silicon Valley Power
SWP	California Department of Water Resources' State Water Project
SWPPP	Stormwater Pollution Prevention Plan
<u>SWRCB</u>	State Water Resources Control Board
TACs	toxic air contaminants
TSCA	Toxic Substances Control Act

USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VTA	Santa Clara Valley Transportation Authority

Project Overview

Equity Residential (Project Sponsor) is proposing demolition of residential buildings and construction of new buildings at 3131 Homestead Road (Project site) in the City of Santa Clara (City). The Project site, which is the location of the Laguna Clara apartment complex, includes 24 two-story apartment buildings with 264 dwelling units and a central leasing and amenity building. The Laguna Clara II Project (Project) would include demolition of three of the two-story apartment buildings and partial demolition of an additional apartment building in the center of the Project site. A total of 42 dwelling units would be removed, along with two accessory buildings, which are one-story structures, and four carport structures. In place of these demolished structures, the Project Sponsor would construct a new single three- and four-story apartment building over a partially below-grade parking garage. Upon Project completion, there would be a net increase in residential space totaling approximately 54,073 square feet (sf), 183 additional residential units, 384 additional parking spaces, and 63,667 sf of additional open space. The Project site would continue to be accessible from the four driveways on Homestead Road and Quince Avenue. Bicyclists and pedestrians would continue to access the Project site from existing sidewalks and bicycle lanes on Homestead Road. As part of the Project, new pedestrian pathways would be provided between the new buildings.

Purpose of This Document

This initial study of environmental impacts is being prepared to conform to the requirements of the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations 15000 et seq.), and the regulations and policies of the City. The purpose of this document is to provide objective information regarding the environmental consequences of the Project to the decision-makers who will be reviewing and considering Project. The City is the lead agency for the Project under CEQA.

This initial study evaluates potential environmental impacts that might reasonably be anticipated to result from the Project.

All documents referenced in this initial study are available for public review at the Community Development Department, located at Santa Clara City Hall, 1500 Warburton Avenue, during normal business hours.

Project Information

1. Project Title:

Laguna Clara II Project

2. Lead Agency Name and Address:

City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050

3. Contact Person and Phone Number:

Debby Fernandez: (408) 615-2450

4. Project Location:

3131 Homestead Road, Santa Clara, CA

5. Project Sponsor's Name and Address:

Equity Residential
333 Third Street, Suite 210
San Francisco, CA 94107
Contact: John E. Hyjer

6. General Plan Designation:

Medium-Density Residential

7. Description of Project:

Please refer to Chapter 2, *Project Description*.

8. Surrounding Land Uses and Setting:

The Project site, the Laguna Clara apartment complex, is south of U.S. 101 and north of Interstate 280 (I-280). The area surrounding the Project site is characterized primarily by single- and multi-family housing and commercial properties separated by major regional roadways. In addition, there are several schools and parks in the vicinity of the Project site, such as Stratford School – Santa Clara Pomeroy, Santa Clara High School, John Sutter Elementary School, Santa Clara Central Park, and Homeridge Park; however, both parks are more than a half mile away. The Project site is bounded by single-family residential units and a church to the north, single-family residential units to the east, Homestead Road to the south, and Quince Avenue to the west.

9. Other Public Agencies Whose Approval May Be Required (e.g., permits, financing approval, participation agreement), Potential Responsible Agencies, and Trustee Agencies:

- Bay Area Air Quality Management District
- California Regional Water Quality Control Board/Santa Clara Valley Water District
- Santa Clara Valley Transportation Authority
- Santa Clara Fire Department
- County of Santa Clara Department of Environmental Health

- City of Santa Clara Sewer Utility
- Native American Heritage Commission

10. Have California Native American tribes that are traditionally and culturally affiliated with the Project area requested consultation, pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?

The Native American Heritage Commission (NAHC) was contacted on January 10, 2020, to identify any areas of concern within the Project area. The NAHC responded on January 15, 2020, stating that a search of its Sacred Land File indicated the presence of Native American cultural resources in the immediate Project area and that the Ohlone tribe and Muwekma Ohlone tribe should be contacted for more information. The NAHC also provided a list of seven Native American contacts who might have information that would be pertinent to the Project or concerns regarding the proposed actions. A letter explaining the Project, along with a map of the Project area, was sent on January 21 and February 5 to all seven contacts listed by the NAHC. The letter solicited responses from each of the contacts, along with questions, comments, or concerns regarding the Project. See Section XVIII, *Tribal Cultural Resources*, in Chapter 3 for more information.

Chapter 2

Project Description

Equity Residential (Project Sponsor) is proposing demolition of residential buildings and construction of new buildings at 3131 Homestead Road (Project site) in the City of Santa Clara (City). The Project site, which is the location of the Laguna Clara apartment complex, includes 24 two-story apartment buildings with 264 dwelling units and a central leasing and amenity building. The Laguna Clara II Project (Project) would include demolition of three of the two-story apartment buildings and partial demolition of an additional apartment building in the center of the Project site. A total of 42 dwelling units would be removed, along with two accessory buildings (a one-story clubhouse/leasing office as well as a central boiler room) and four carport structures. In the same area, the Project Sponsor would construct a three- and four-story apartment building with 225 new units over a partially below-grade parking garage. Upon completion, the Project site would have a total of 447 dwelling units, giving the complex approximately 183 additional units compared with existing conditions. In addition, the Project site would have approximately 778 parking spaces, 450 of which would be new spaces constructed as part of the Project. The Project would require architectural review for approval.

Project Location and Existing Conditions

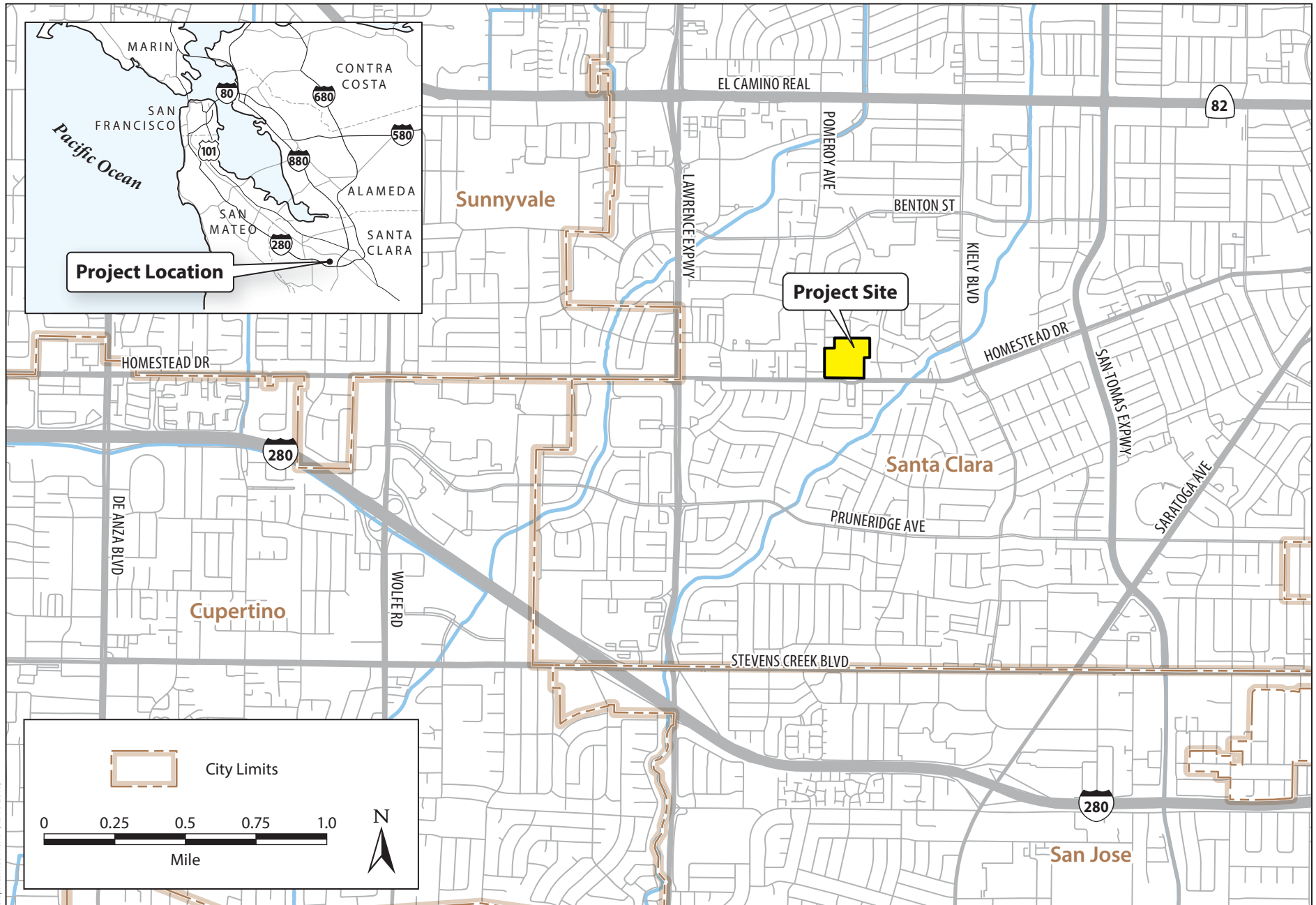
Project Location

The Project site is in the southwestern portion of the City at 3131 Homestead Road (see Figure 2-1). The Project site is bound by single-family residential units and a church to the north, single-family residential units to the east, Homestead Road to the south, and Quince Avenue to the west. Homestead Road and the surrounding area are characterized primarily by residential subdivisions, consisting of single- and multi-family housing, and commercial properties separated by major regional roadways (see Figure 2-2). Homestead Road is a major thoroughfare, bisecting the area in an east/west direction. Several schools, including Stratford School – Santa Clara Pomeroy, Santa Clara High School, and John Sutter Elementary School, are also in the immediate vicinity of the Project site. Central Park and Homeridge Park are more than a half mile from the Project site.

Existing Land Use and Zoning

The Project site is currently designated as Medium-Density Residential in the *City of Santa Clara 2010–2035 General Plan* (General Plan) and zoned as Moderate-Density Multiple Dwelling (R3-25D).¹ The Medium-Density Residential designation is intended for areas with access from collector or arterial streets or in proximity to neighborhood centers and mixed uses, allowing for a range of housing types, including a combination of low-rise (two- to four-story) apartments, townhouses, and row houses with garage or below-grade parking. The maximum permitted density per the General Plan designation is 20 to 36 dwelling units per acre.

¹ City of Santa Clara. 2014. *City of Santa Clara 2010–2035 General Plan*. Updated: December 9, 2014. Available: <http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan>. Accessed: October 18, 2019.



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Figure 2-1
Project Location
Laguna Clara II Project



Graphics...00146.19 (12-16-2019)



Figure 2-2
Project Site
Laguna Clara II Project

As set forth in Chapter 18.18 of the Santa Clara City Code, the R3-25D zoning district is intended to encourage a lot assembly that provides “quality multi-unit housing at a moderate medium density” and establishes the “percentages of open space required.” Permitted uses under this designation include single-family dwellings, two-family dwellings, dwelling groups, multiple-family dwellings, private garages and accessory buildings, home occupation uses, supportive housing, and transitional housing. The parcels in the vicinity of the Project site are zoned Moderate-Density Multiple Dwelling (R3-25D); Single Family, with larger lot area (R1-8L); Low-Density Multiple Dwelling (R3-18D); Single Family (R1-6L); Planned Development (PD); and Public or Quasi-Public (B).

Existing Conditions

The Project site occupies one 12.43-acre parcel (assessor’s parcel number 290-24-071) and is developed with 24 two-story apartment buildings with 264 dwelling units, two accessory buildings that house the leasing office/clubhouse and the central boiler room, and 13 carport structures. The existing buildings on the Project site have a footprint of approximately 291,786 sf. Approximately 394 surface parking spaces are located throughout the Project site.

Vehicle ingress and egress at the Project site is provided by three driveways on Homestead Road and one driveway on Quince Avenue. Pathways are provided throughout the Project site for bicyclist and pedestrian circulation. Bicyclist and pedestrian facilities near the Project site include sidewalks, crosswalks, and Class II bike lanes. Homestead Road has sidewalks and bicycle lanes on both sides of the street, and crosswalks are located at all signalized intersections.

Transit facilities near the Project site include Caltrain stations for commuter rail service. Santa Clara Station is approximately 3 miles to the northeast, and Lawrence Station is approximately 3 miles to the north. In addition, the local Santa Clara Valley Transportation Authority (VTA) 53 bus travels along Homestead Road, and the local 57 bus travels along Kiely Boulevard; both routes are in the Project vicinity. The Project site is also approximately 3.25 miles southwest of Norman Y. Mineta San Jose International Airport.

There are 457 trees on the Project site, along with limited landscaping. The trees are located along pathways and between buildings. The species include Monterey pine, coast redwood, oak, European white birch, African fern-pine, sweetgum, Italian alder, and Japanese maple. The coast redwood and oak trees are considered protected trees under the General Plan.

Project Characteristics

This section discusses the land use and zoning changes that would be required as part of the Project. It also provides details regarding the proposed development, parking and site access, site and building design, open space and landscape design, and utilities.

Land Use and Zoning

The Project proposes to apply the provisions of Assembly Bill (AB) 3194 (2018) for the development of new housing, consistent with the General Plan designation for the Project site. The existing Medium-Density Residential designation for the site allows a density range of 20 to 36 dwelling units per acre. Build-out of the Project would provide a total of 447 dwelling units at a density of 36 units per acre. Rezoning the Project site from Moderate-Density Multiple Dwelling (R3-25D) to Medium-Density Multiple Dwelling (R3-36D) is not required under the provisions of AB 3194 to align the zoning designation with

the General Plan designation. Nevertheless, the Project would apply the development standards assigned to the R3-36D zoning district to the Project site, consistent with the General Plan Medium-Density Residential designation. The Project would require architectural review approval for the site and building design.

Proposed Development

The Project proposes to demolish three of the two-story apartment buildings and partially demolish an additional apartment building in the center of the Project site. A total of 42 dwelling units would be removed, along with two accessory buildings (a one-story clubhouse/leasing office as well as a central boiler room) and four carport structures. In place of these demolished buildings, a single three- and four-story apartment building with 225 new dwelling units would be constructed, giving the complex approximately 183 additional dwelling units compared with existing conditions. The new three- and four-story apartment building would be constructed over a partially below-grade parking garage, which is described in more detail below. Furthermore, the Project site would include approximately 254,177 sf of open space for both existing and future residents in the form of pathways, courtyards, lounge areas, and a roof deck. Upon completion, residential development at the Project site would total approximately 223,743 sf, which includes approximately 145,717 sf of existing uses that would remain at the site and approximately 78,026 sf of new uses that would be constructed under the Project.

As shown in Figure 2-3, 19 of the existing apartment buildings would remain on the Project site. The Project proposes no changes to these existing residential buildings, other than landscaping and open space improvements. All building and surface parking lot demolition and new construction would occur in the south-central portion of the Project site. The 225 new residential units are anticipated to consist of 46 studios, 139 one-bedroom units, and 40 two-bedroom units. The density at Project completion, including both the existing units that would remain and the new residential units, would amount to 36 residential units per acre. Of the 225 new residential units proposed, 10 percent of the net new units would be available at affordable prices, with rental rates for extremely low-, very low-, low-, and moderate-income households. The Project elements, including existing uses to remain, existing uses to be demolished, and proposed new apartment building uses are summarized in Table 2-1 and Table 2-2.

Table 2-1. Project Features

Use	Existing Uses to Remain	Existing Uses to Be Demolished	Proposed Uses	Total Uses (Including Existing Uses to Remain plus Proposed Uses)	Net Change
Residential Units	222	42	225	447	+183
Residential Area (sf)	145,717	23,953	78,026	223,743	+54,073
Vehicle Parking Spaces	328	83	450	778	+384
Open Space/Landscaping (sf)	190,510	6,157	63,667	254,177	-6,157

Source: BDE Architecture, 2019.

Source: BDE Architecture, 2019.

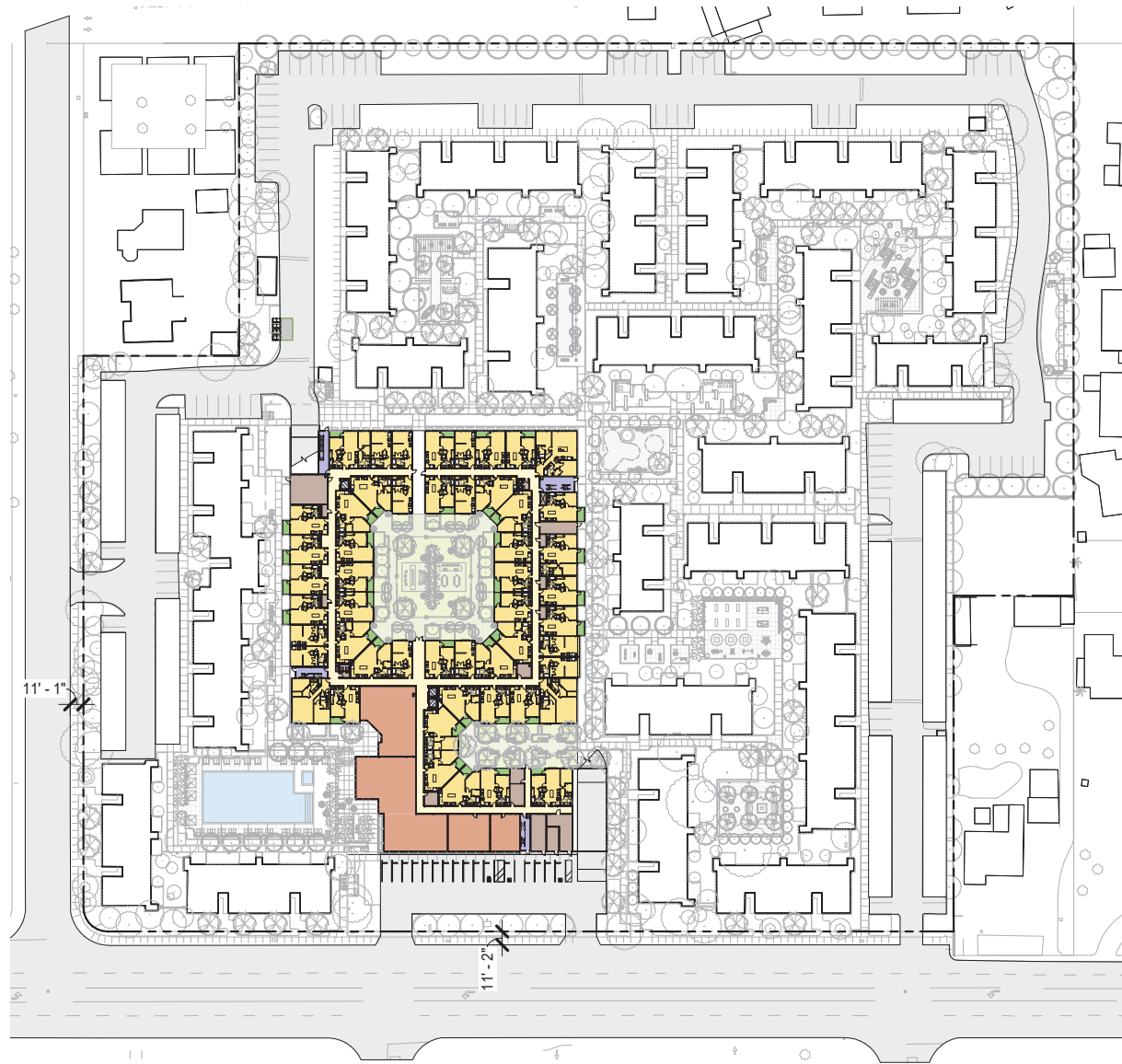


Figure 2-3
Proposed Site Plan
Laguna Clara II Project

Table 2-2. Proposed Apartment Building Characteristics

Use (sf)	Basement (B1)	First Floor	Second Floor	Third Floor	Fourth Floor	Total (sf)
Rentable Residential Space ^a	—	39,848	51,703	51,703	38,755	182,009
Gross Residential Space ^b	—	14,248	12,448	12,448	12,459	51,063
Amenity and Leasing Space (Interior Only)	—	4,510	—	—	1,753	6,263
Garage Space ^c	75,870	—	—	—	—	75,870
Total Gross Space	75,870	58,606	64,151	64,151	52,967	315,745

Source: BDE Architecture, 2019.

^a Residential rentable space does not include deck space.

^b Gross residential space includes the lobby, corridors, stairs, and other areas.

^c Garage space includes storage and utilities.

Currently, 534 residents² occupy the buildings on the Project site, and six employees work at the site. Upon full build-out, 1,030 residents³ would occupy the new and existing buildings (496 new residents),⁴ and 10 employees would work at the site (four new employees).

Parking and Site Access

Vehicle ingress and egress would be provided via the four driveways on Homestead Road and Quince Avenue. Three driveways are along the southern perimeter of the Project site on Homestead Road, and one driveway is along the western perimeter of the Project site on Quince Avenue. The driveways along the southern perimeter of the Project site would serve as the main entries to the site for passenger and service vehicles. A 26-foot-wide road along the eastern perimeter, accessible via Homestead Road, and a 25-foot-wide road along the western perimeter, accessible via Quince Avenue, would be used for fire access and general circulation. Both roads are part of the existing site.

In total, approximately 450 new parking spaces would be provided on the Project site, including nine handicap stalls, two of which would be accessible parking spaces for vans. Of the 450 new parking spaces, 434 of them would be within stackers in the basement level of the newly constructed residential building; 16 would be surface parking spaces along the southern perimeter of the new residential building. The 328 existing parking spaces⁵ on the site combined with the new spaces would result in a total of 778 parking spaces. The entrances to the basement level parking garage would be on the northern and southern perimeters of the Project site. In addition, the Project would include a 20-foot by 26-foot loading zone along the northern perimeter of the Project site (Figure 2-5). Finally, 149 Class I bicycle spaces would be provided throughout the Project site, and 30 Class II bicycle spaces would be provided near the northern and southern perimeters of the site.

² Actual rent roll, January 10, 2020.

³ There are 534 existing residents on the Project site, and the Project would add 496 new residents upon Project completion. Therefore, 534 existing residents + 496 new residents = 1,030 total residents.

⁴ State of California Department of Finance. 2020. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011–2020 with 2010 Benchmark*. May. Available: <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/>. Accessed: June 23, 2020.

⁵ Currently, 311 parking spaces within the Project site would remain under the Project. An additional 17 parking spaces would be added as new spaces on the Project site; however, these are outside the scope of this Project. Therefore, the adjusted number of existing parking spaces would increase to 328.

Site and Building Design

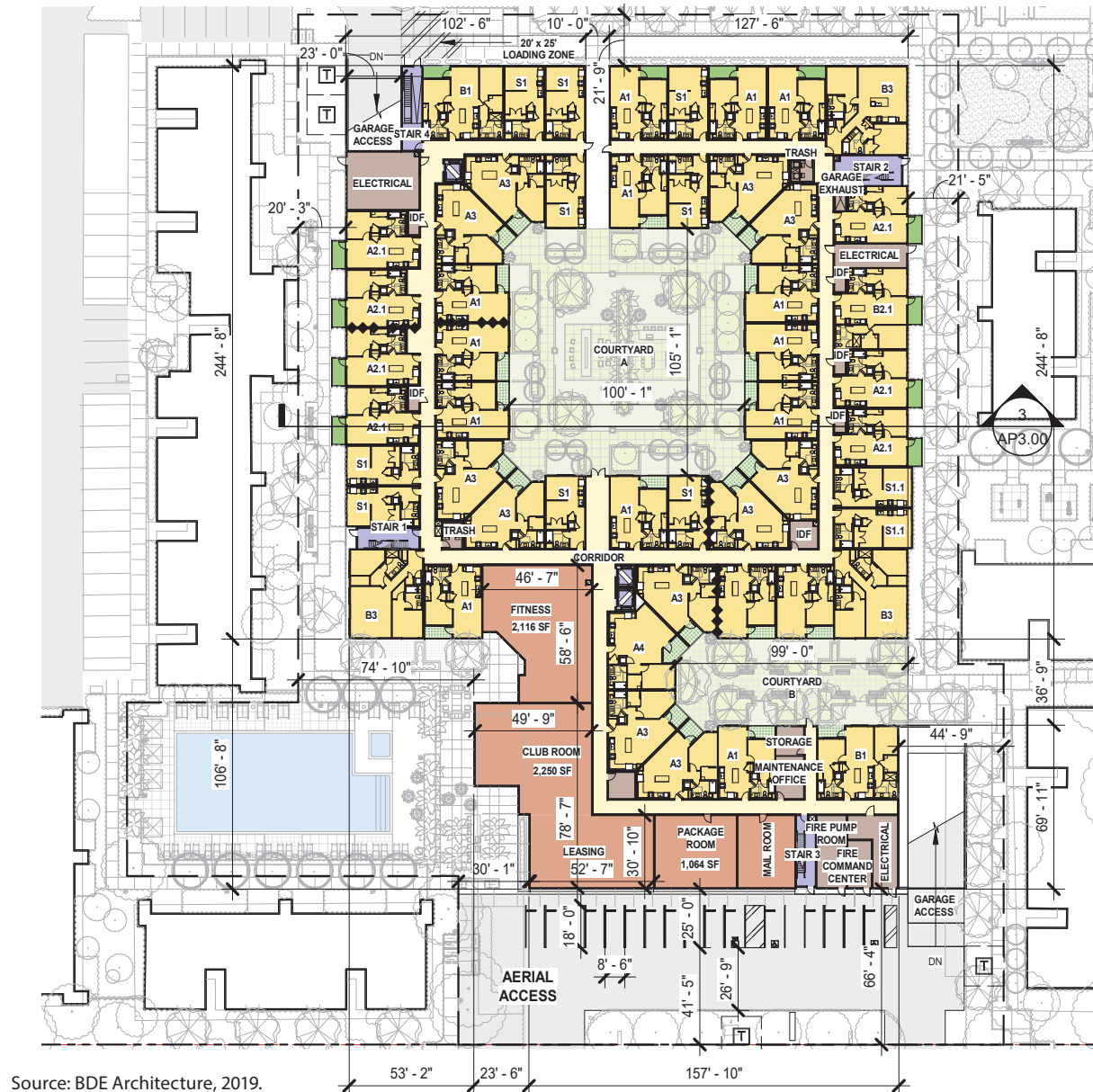
The description of the Project's uses, including the summary information above and the more detailed information below, is based on current plans (see Figure 2-3). The proposed development would include a partially below-grade parking garage, as described in the prior section. In addition to vehicles, the garage would also provide space for storage and building maintenance. The first floor of the apartment building would comprise multiple uses, including residential units; a 10,500 sf, centrally located courtyard; a 2,188 sf fitness area; an additional 3,833 sf courtyard; leasing and amenity space; mail and package rooms; bicycle storage space; electrical rooms; and access to the partially below-ground parking garage. The second and third floors would provide an array of residential units. Finally, the fourth floor would provide more residential units as well as a 2,886 sf game room and a 7,718 sf roof deck on the three-story portion of the building. Proposed floor plans for the building, including the basement, are shown in Figures 2-4 through 2-7. In addition, building sections are shown in Figure 2-8. Approximately 254,177 sf of the Project site would be considered open space and used by both existing and future residents, as discussed in more detail in the following section.

The proposed building would be setback 66 feet from Homestead Road. The three-story portion of the building would be constructed on the south side of the site, facing Homestead Road; the building would increase to four stories toward the interior of the Project site. The Project would use contemporary materials and detailing, including plaster, wood, accent walls, railings, trellises, and balconies (see Figures 2-9 and 2-10). As mentioned previously, no enhancements would be made to the existing residential units, other than landscaping and open space improvements as part of the Project. The new residential units would include natural elements and neutral colors, which would complement the existing residential buildings. The building construction type, per the California Building Standards Code, would be Type VA (protected wood frame), which is commonly used for the construction of newer apartment buildings.

The Project would include a number of sustainability features, including drought-tolerant plantings, Energy Star appliances, LED lighting, water reuse systems, and a Leadership in Energy and Environmental Design (LEED) Gold rating. In addition, solar panels would be installed on the roof of the new building, generating at least 680,000 kilowatt hours per year, or approximately 85 percent of the anticipated energy for hallways, the garage, elevators, stairwells, and common area heating, ventilation, and air-conditioning (HVAC).

Open Space and Landscape Design

Of the 457 trees on the Project site, 255 of the trees (of which 234 are considered healthy) would be removed; 202 trees would remain. The removed trees would include a variety of species, such as Monterey pine, coast redwood, European white birch, African fern-pine, sweetgum, Italian alder, and Japanese maple. To meet the 2:1 replacement ratio, a tree replacement plan will be required as a standard condition of approval for the Project. As shown in the conceptual landscape plans, up to 327 new trees, including, but not limited to, Japanese maple, red maple, cedar, live oak, and Carolina cherry laurel species, would be planted throughout the Project site, providing approximately 510 trees onsite. An additional 141 trees would be replaced through an in-lieu payment for tree planting offsite to meet the full 2:1 replacement ratio for the 234 healthy trees removed. In addition, shrubs and ground cover would be planted throughout the Project site. Tree protection measures would be employed to preserve the trees that would remain.



VEHICLE PARKING PROPOSED

GARAGE PARKING:
 424 STACKER STALLS
 6 HANDICAP STALLS (1 VAN ACCESSIBLE)
 4 STANDARD STALLS
TOTAL IN GARAGE: 434 STALLS

SURFACE PARKING:
 13 STANDARD STALLS
 3 HANDICAP STALLS (1 VAN ACCESSIBLE)
TOTAL AT SURFACE: 16 STALLS

TOTAL: 450 STALLS (434 + 16)

VEHICLE PARKING EXISTING

CURRENTLY EXISTING:
 394 PARKING STALLS

TO BE REMOVED:
 -83 STALLS

**TO BE ADDED TO SITE APART FROM
 PROPOSED NEW BUILDING:**
 +17 NEW PARKING STALLS

TOTAL: 328 STALLS (394 - 83 + 17)

TOTAL PROPOSED + EXISTING = 778 STALLS

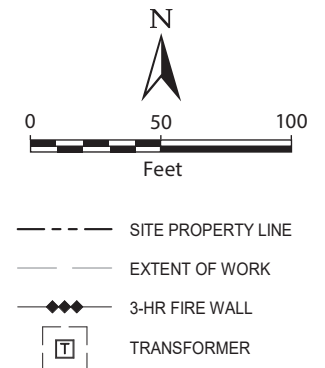


Figure 2-5
Proposed Level 1 Floor Plan
 Laguna Clara II Project

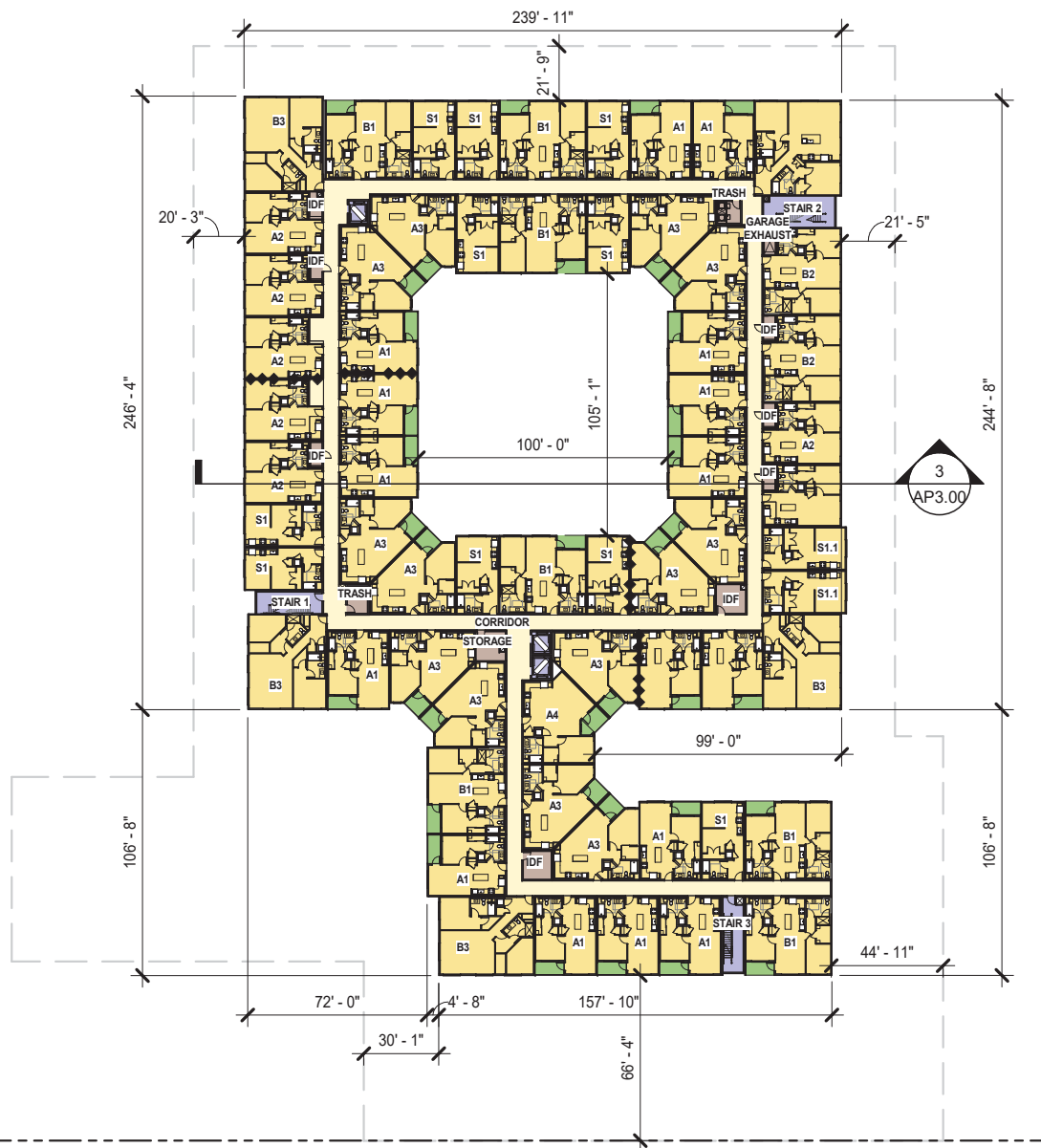
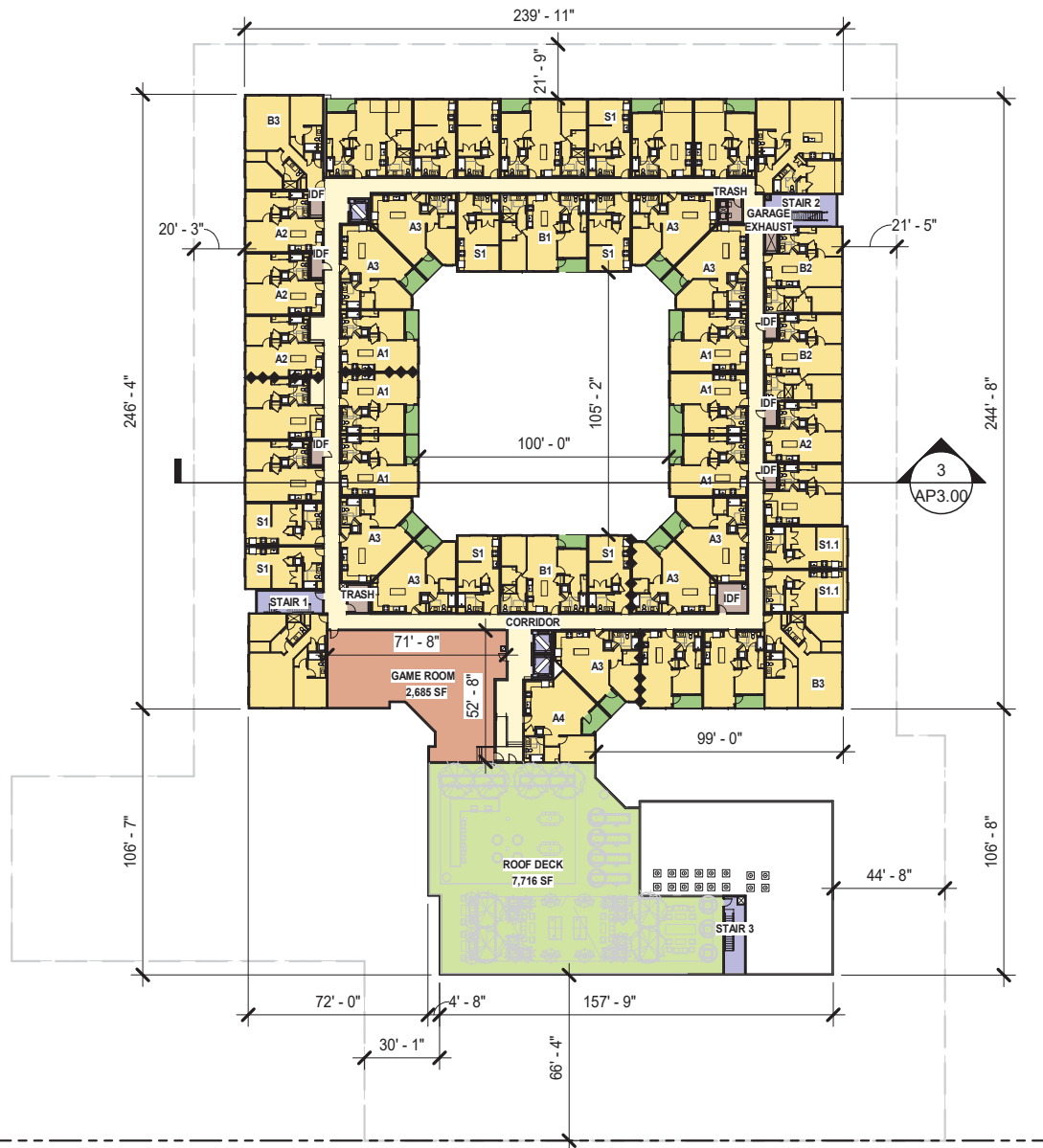
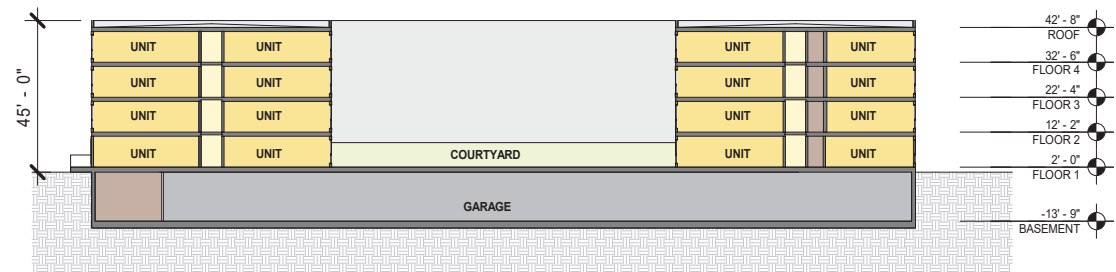


Figure 2-6
Proposed Level 2 Floor Plan
Laguna Clara II Project

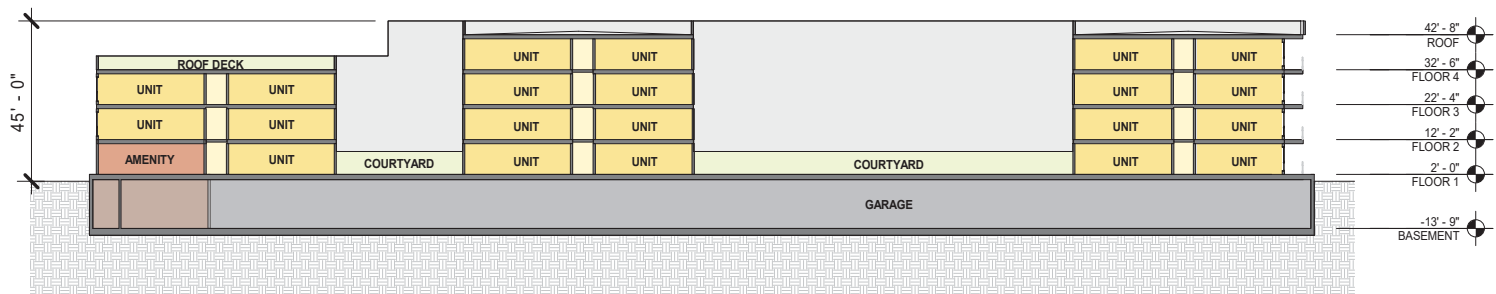


Source: BDE Architecture, 2019.

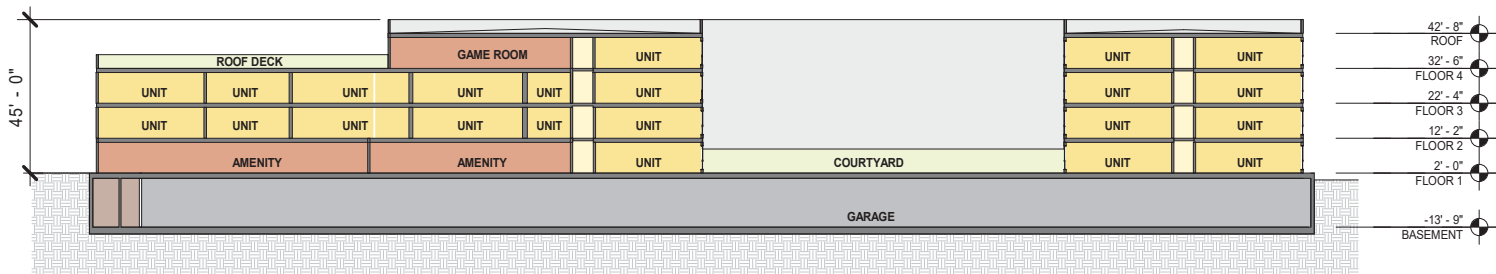
Figure 2-7
Proposed Level 4 Floor Plan
 Laguna Clara II Project



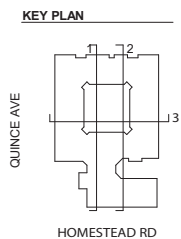
BUILDING SECTION 3



BUILDING SECTION 2



BUILDING SECTION 1



Source: BDE Architecture, 2019.



Figure 2-8
Proposed Building Sections
Laguna Clara II Project



Source: BDE Architecture, 2019.

Figure 2-9
View from Homestead Road Looking Northwest
Laguna Clara II Project



Source: BDE Architecture, 2019.



Figure 2-10
View of Northwest Corner of Building
Laguna Clara II Project

The Project proposes a number of open space areas and amenities, both for new and existing residents, as shown in Figures 2-11 and 2-12. In total, the Project would provide approximately 254,177 sf of open space. Specifically, the Project would provide approximately 63,667 sf of active recreational amenities in the form of a pool, courtyards, lounge areas, gardens, an outdoor fitness area, a children's playground, bocce court, mini golf putting green, roof deck, dog run, and quiet seating area. Approximately 1 acre of this active recreational amenity space would be dedicated to the City. The proposed outdoor fitness areas would include a yoga area, ping pong table, pool table, and exercise equipment. The gardens would include a trellised barbeque island, dining areas, a vegetable garden, and fruit trees in raised beds, along with a potting shed. Similarly, the roof deck would include trellis-covered grills, dining areas/counter tops, game tables with seating areas, a pool overlook lounge, vegetable garden, and fruit trees in raised beds. Finally, the proposed pool courtyard would include a 42-foot by 75-foot pool, spa, deck, chaise lounges, cabanas, and tables and chairs.

Utilities

Onsite utilities would encompass energy (gas and electric), domestic water, wastewater, and storm drain facilities. All onsite utilities would be designed in accordance with applicable codes and current engineering practices.

Energy

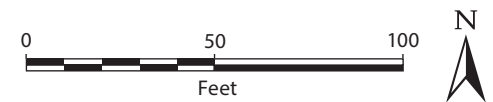
The Project would connect to existing electrical and gas lines located around the perimeter of the Project site. The Project site's service laterals would connect to existing gas lines located in Homestead Road and Quince Avenue. The existing overhead electrical lines along Homestead Road would be used, as would the existing electrical lines located along Quince Avenue. In addition, the Project would include three separate electrical rooms. The first electrical room would be connected to two Silicon Valley Power (SVP) utility transformers; this room would be located near the northwestern portion of the new apartment building. The second electrical room would be located near the eastern portion of the apartment building. Finally, the third electrical room would be connected to one SVP utility transformer; this room would be located near the southeastern portion of the new building.

Domestic Water

The existing and new residential uses at the Project site would be served by an onsite water distribution system that would be connected to the City water mains located in Homestead Road, Quince Avenue, and Miles Drive. The Project shall provide four new water connections to the City water mains located on Homestead Road, Quince Avenue, and Miles Drive and provide new private water mains along the northern perimeter of the site to serve buildings on the northern side of the complex. The existing 8-inch City water main located along the northern perimeter of the site shall become a private fire main. Once converted to a private fire main, water meters and backflow devices shall be installed at the ends of the private fire main at Quince Avenue and Miles Drive per City Water and Sewer Utilities Department Standards.

Wastewater

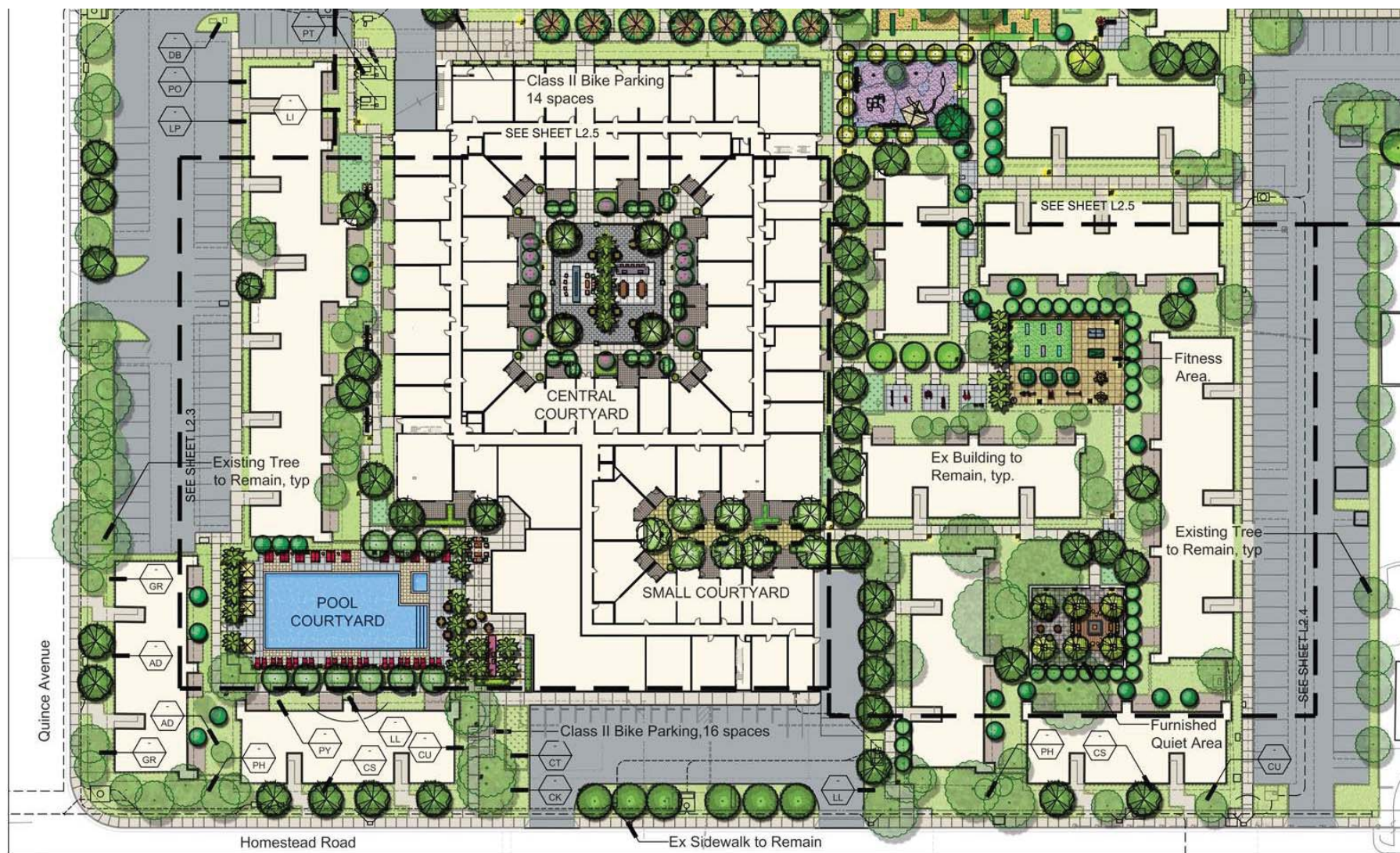
New sanitary sewer lines for the apartment building would range from 6 to 8 inches and be located around the perimeter of the building. These new sanitary sewer lines would ultimately connect through laterals to an existing 18-inch sanitary sewer main in Homestead Road. The sewer laterals for servicing the existing residential uses that would remain would continue to use the same 18-inch sanitary sewer main in Homestead Road.



Source: BDE Architecture, 2019.



Figure 2-11
Proposed Landscape Plan (North)
 Laguna Clara II Project



Source: BDE Architecture, 2019.



Figure 2-12
Proposed Landscape Plan (South)
 Laguna Clara II Project

Storm Drainage

New stormwater drains and catchment basins would be placed around the perimeter and throughout the Project site. Stormwater collected from new storm drainage lines in the northern portion of the Project site would discharge to an existing 12-inch storm drain located in the northern perimeter road from a new storm drainage lateral. Stormwater collected from the southern portion of the Project site would ultimately discharge from a new stormwater lateral to an existing 24-inch storm drain main line located in Homestead Road. In addition, the Project would incorporate bio-retention areas as part of the Storm Water Quality Control Plan. There would be 20 bio-retention areas throughout the Project site. These would vary in size and include different types of treatment systems, such as bio-treatment ponds; flow-through planters, or a combination of these two systems; and self-treating areas. The Project would reduce the amount of impervious surface areas on the site, which would result in less stormwater being discharged compared with existing conditions.

The Project would implement a variety of stormwater management measures to reduce water quality impacts related to stormwater runoff, pursuant to applicable provisions of National Pollutant Discharge Elimination System (NPDES) Permit No. CAS612008. Stormwater runoff generated on the Project site would be treated to the maximum extent feasible by implementing a mixture of low-impact development (LID) best management practices (BMPs) as well as a media filtration system that complies with applicable provisions of Chapter 6 of the Santa Clara Valley Urban Runoff Pollution Prevention Program C.3 Handbook.

Project Construction

The proposed construction methods, which are considered conceptual at this time, would be subject to review and approval by the City. For the purposes of this environmental document, the analysis considers the construction plan described below.

Construction Schedule and Phasing

The Project would consist of six construction phases: demolition, site preparation, grading, building construction, paving, and architectural coatings. Pile driving would not be required. Standard construction work hours would be 7 a.m. to 6 p.m. Monday through Friday and 9 a.m. to 6 p.m. on Saturdays. Construction would begin in October 2020; the Project would be fully operational by October 2022.

Construction Spoils and Debris

The Project would require soil excavation and the removal of trees. The maximum excavation depth would be 16 feet below the existing grade. The proposed excavation would involve approximately 35,500 cubic yards of cut materials and approximately 6,000 cubic yards of mixed construction debris. About 3,900 cubic yards of the mixed construction debris would be recycled to meet the 65 percent recycling mandate; the remaining 2,100 cubic yards would be off hauled to a landfill. As such, construction of the Project would require disposal of mixed construction debris at a permitted landfill. All soil and debris would be off hauled to Zanker Recycling in San Jose, approximately 10 miles from the Project site. The haul trucks would exit the site by heading north to El Camino Real, then west to Sylvan Avenue. The trucks would continue east on State Route 237, then exit at Zanker Road. The number of truck trips required to dispose of demolished materials and excavated soil would be approximately 4,800. This would include 150 trucks

per day for demolition, for a total of 3,800 truck trips, and 10 trucks per day for framing, for a total of 1,000 truck trips.

Construction Equipment and Staging

Typical equipment would be used during Project construction, including concrete/industrial saws, excavators, rubber-tired dozers, tractors/loaders/backhoes, graders, scrapers, cranes, forklifts, generator sets, welders, pavers, paving equipment, rollers, and air compressors. Potential construction laydown and staging areas would be located directly adjacent and perpendicular to Quince Road on the southwest corner of the site, just north of the construction entrance.

Construction Employment

The size of the construction workforce would vary during the different phases of construction. The demolition phase would average 20 construction workers per day, the site preparation and grading phases would each average 25 construction workers per day, the building construction phase would average 85 construction workers per day, the paving phase would average 15 construction workers per day, and the architectural coatings phase would average 35 construction workers per day. Carpooling would be encouraged, and public street parking would be discouraged or prohibited. Negotiations are under way with the Salvation Army, south of the Project site across Homestead Road, regarding a rental area with 46 parking spaces that construction workers could use.

Project Approvals

City Approvals

The following approvals by the City would be required prior to development at the Project site; these approvals would be informed by the initial study/mitigated negative declaration.

- **Architectural Review** – Pursuant to Chapter 18.76 of the Santa Clara Zoning Code, the Project would be required to undergo architectural review and approval by the Director of Community Development at a public development review hearing prior to the issuance of building permits.
- **Santa Clara Building Division** – The Project would require several ministerial permits from the Building Division upon Project approval for demolition, grading, and building.

Approvals by Responsible Agencies

Reviews and approvals by other agencies that may be needed for the Project to proceed are also identified. Some of these agencies would need to approve certain parts of the Project prior to full implementation, but their approval would not be required for adoption of the Initial Study/Mitigated Negative Declaration.

- **Bay Area Air Quality Management District** – Permitting of asbestos abatement activities, if any, and permits for additional onsite generators. Permits may also be required for boilers and other utility equipment.
- **California Regional Water Quality Control Board/Santa Clara Valley Water District** – Approval of NPDES permit for stormwater discharges.
- **Santa Clara Valley Transportation Authority** – Review of potential effects on public transit.

- **Santa Clara Fire Department** – Approval of proposed fire prevention systems, onsite generators, and emergency vehicle access.
- **County of Santa Clara Department of Environmental Health** – Review of onsite generators.
- **City of Santa Clara Sewer Utility** – Approval of wastewater hookups.
- **Native American Heritage Commission** – Consultation and review regarding cultural resources in the area.

Chapter 3 Environmental Checklist

Environmental Factors Potentially Affected


The environmental factors checked below could be affected by the Laguna Clara II Project (Project) (i.e., the Project would involve at least one impact that would be a “potentially significant impact”), as indicated by the checklists on the following pages.

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

Determination

On the basis of this initial evaluation:

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


Signature

7.9.20
Date

DEBBY FERNANDEZ
Printed Name

For

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except “no impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “no impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., a project falls outside a fault rupture zone). A “no impact” answer should be explained if it is based on project-specific factors as well as general standards (e.g., a project that will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially significant impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “potentially significant impact” entries when the determination is made, an environmental impact report (EIR) is required.
4. “Negative Declaration: Less than Significant with Mitigation Incorporated” applies when the incorporation of mitigation measures would reduce an effect from a “potentially significant impact” to a “less than significant impact.” The lead agency must describe the mitigation measures and briefly explain how they would reduce the effect to a less than significant level. (Mitigation measures from earlier analyses, as described in #5, below, may be cross-referenced.)
5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063[c][3][D]). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where earlier analyses are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document, pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures, based on the earlier analysis.
 - c. Mitigation Measures. For effects that are “less than significant with mitigation incorporated,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the Project.
6. Lead agencies are encouraged to incorporate references to information sources for potential impacts (e.g., general plans, zoning ordinances) in the checklist. References to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a Project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
 - a. The significance criteria or threshold, if any, used to evaluate each question; and
 - b. The mitigation measure identified, if any, to reduce the impact to a less than significant level.

I. Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the Project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

The Project site is in Santa Clara County and the City of Santa Clara (City) at 3131 Homestead Road. The City is in a highly developed urban/suburban area in the center of the Santa Clara Valley. The dominant visual resources in Santa Clara include the Santa Cruz Mountains to the southwest and west and the Diablo Range to the east, which bracket the Santa Clara Valley.

The Project site on Homestead Road and the surrounding area are characterized primarily by residential subdivisions and commercial properties separated by major regional roadways. Homestead Road is a major thoroughfare, bisecting the area from east to west. The Project site is surrounded by a church and homes built in the 1970s to the north; homes and apartments to the west; one-story buildings, a church, and homes to the south; and two-story homes built in 2015 to the east. Because of the various types and periods of development in the area, there are no consistent blocks; setbacks, lot sizes, and building architectural styles vary throughout the area. Landscaping in the vicinity is limited to dispersed trees and manicured lawns.

The Project site is currently developed with 24 two-story apartment buildings, 394 surface parking spaces, 457 trees, and limited landscaping, including a concrete-lined lagoon. The trees, which are located throughout the site along pathways and between buildings, include a variety of species (e.g., Monterey pine, coast redwood, European white birch, African fern-pine, sweetgum, Italian alder, Japanese maple). Limited distant views of the Santa Cruz Mountains are visible from the perimeter of the Project site on Homestead Road, behind the automobile traffic and development. Other views from the Project site are limited to the homes and two churches, which are obscured by trees and traffic.

Limited public views of the Project site are available from Homestead Road and Quince Avenue. Motorists traveling along Homestead Road or Quince Avenue have short-duration views because of vehicle travel speeds. Passing bicyclists and pedestrians also have relatively short-duration views.

The Project site is visually dominated by two-story apartment buildings, landscaping, trees, and a lagoon that flows throughout the site. The buildings are predominately pale yellow, with a rusted red trim.

Existing sources of light in the vicinity of the Project site are primarily the streetlights and the headlights on vehicles traveling along Homestead Road and Quince Avenue. Sources of daytime glare can either be a

direct source of light or an object that reflects light from another source, such as a window. Existing sources of daytime glare in the Project site include the light reflected from buildings and car windows. External nighttime lighting at residences near the Project site contributes low levels of nighttime glare.

Discussion

a. Have a substantial adverse effect on a scenic vista? (No Impact)

A scenic vista is a designated area that is visually or aesthetically pleasing. According to the City of *Santa Clara 2010–2035 General Plan* (General Plan) EIR,⁶ there are no scenic vistas within the city. Therefore, there is no potential for the Project to have an adverse effect on a scenic vista; there would be ***no impact***.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway? (No Impact)

There are no scenic resources within or immediately surrounding the Project site, and there are no State Scenic Highways in the city.⁷ As such, the Project would have ***no impact*** on scenic resources within a State Scenic Highway.

c. If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality? (Less than Significant)

Project construction would involve demolition, earthmoving, grading, and tree removal. As a result, construction equipment, vehicles, fencing, construction staging areas, and associated debris would be present and visible on the Project site to varying degrees, depending on the phase of construction and the equipment being used for the 24-month construction period. This would temporarily change the visual character of the Project site. The visual effects of construction would be temporary and similar in character to the effects of other types of construction that occurs in the city. Therefore, these activities would not represent a significant visual impact; the impact would be ***less than significant***.

As discussed in Chapter 2, *Project Description*, the Project proposes to apply the provisions of Assembly Bill (AB) 3194 (2018) to the development of 183 new housing units. Development at the Project site would be consistent with the General Plan designation for the site. The existing Medium-Density Residential designation for the site allows a density range of 20 to 36 dwelling units per acre. Build-out of the Project would provide a total of 447 dwelling units, at a density of 36 units per acre. Rezoning of the Project site from Moderate-Density Multiple Dwelling (R3-25D) to Medium-Density Multiple Dwelling (R3-36D) is not required under the provisions of AB 3194 to align the zoning designation with the General Plan designation. Nevertheless, the Project would apply the development standards assigned to the R3-36D zoning district to the Project site.

The Project would require architectural review approval for site and building design. Following AB 3194 procedures and architectural review, the Project would have a ***less than significant*** impact related to conflicts with applicable zoning and other regulations that govern scenic quality.

⁶ City of Santa Clara. 2014. *City of Santa Clara 2010–2035 General Plan*. Updated: December 9, 2014. Available: <https://www.santaclaraca.gov/home/showdocument?id=12900>. Accessed: January 24, 2020.

⁷ California Department of Transportation. 2020. *Scenic Highways*. Available: <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>. Accessed: January 26, 2020.

d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area? (Less than Significant)

The Project would result in new sources of light and glare on the site. The Project would remove 42 dwelling units and replace them with 183 new units. The units would include reflective surfaces, such as windows, which could create glare. In addition, lighting would be provided along the new pathways between the buildings.

There are many sources of existing light and glare in the area. The existing sources of light in the Project area are primarily the streetlights and headlights on vehicles traveling along Homestead Road. The sources of daytime glare in the vicinity of the Project site include the light reflected from surrounding buildings and car windows. The external nighttime lighting at buildings and residences near the Project site contributes low levels of glare.

Given the developed nature of the Project vicinity, the light and glare introduced by the new residences onsite would be negligible relative to existing conditions; the impact would be ***less than significant***.

II. Agricultural and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and the forest carbon measurement methodology provided in the forest protocols adopted by the California Air Resources Board. Would the Project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with existing zoning for, or cause rezoning of forestland (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forestland or conversion of forestland to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or the conversion of forestland to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The Project site is in a developed, urbanized area of the city. As discussed in more detail in Chapter 2, *Project Description*, the site is currently designated Medium-Density Residential and zoned Moderate-Density Multiple Dwelling (R3-25D). It is not used for agricultural purposes. The site comprises apartment buildings and carports.

The 2016 Santa Clara County Important Farmland map shows that the Project site has been designated Urban and Built-up Land, which is defined as residential land with a density of at least one dwelling unit per 1.5 acres, or six dwelling units per 10 acres, as well as land used for industrial and commercial purposes, golf courses, landfills, airports, sewage treatment plants, and water control structures.⁸ The Project site is not designated farmland of any type by the California Natural Resources Agency and is not

⁸ California Department of Conservation. 2018. *Santa Clara County Important Farmland 2016*. September. Available: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/>. Accessed: January 22, 2020.

the subject of a Williamson Act (a statewide agricultural land protection program) contract.⁹ Furthermore, no land adjacent to or in the vicinity of the Project site is designated for or used as farmland.

Forestland, according to California Public Resources Code Section 12220(g), is land that can support a 10 percent native tree cover from any species, including hardwoods, under natural conditions and allow management of one or more forest resources, including resources with timber, aesthetic, fish and wildlife, biodiversity, water quality, recreational, or other public benefits. According to California Public Resources Code Section 4526, *timberland* means land other than that owned by the federal government or designated by the State Board of Forestry and Fire Protection as experimental forestland that is available for and capable of growing a crop of trees of any commercial species to produce lumber and other forest products, including Christmas trees.

The Project site is not considered forestland or timberland. In addition, the Project site is not a forest resource, nor are there forest resources in the surrounding area.¹⁰

Discussion

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (No Impact)

The Project site is not in an area that has been designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the Farmland Mapping and Monitoring Program. The Project would not convert agricultural land to a non-agricultural use. Therefore, the Project would have ***no impact*** on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract? (No Impact)

No zones have been designated on the City's General Plan Land Use map for agricultural uses. As such, the Project would not conflict with existing zoning for agricultural use. According to the California Natural Resources Agency, the Project site is not subject to any Williamson Act contract. Therefore, the Project would have ***no impact*** on existing agricultural zoning or Williamson Act contracts.

c. Conflict with existing zoning for, or cause rezoning of forestland (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])? (No Impact)

d. Result in the loss of forestland or conversion of forestland to non-forest use? (No Impact)

e. Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or the conversion of forestland to non-forest use? (No Impact)

⁹ County of Santa Clara. 2016. *Williamson Act Properties*. Available: <https://sccplanning.maps.arcgis.com/apps/webappviewer/index.html?id=1f39e32b4c0644b0915354c3e59778ce>. Accessed: January 22, 2020.

¹⁰ City of Santa Clara. 2014. *General Plan Land Use Diagram Phase II: 2015–2023 and General Plan Land Use Diagram Phase III: 2023–2035*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: January 22, 2020.

As previously discussed, the Project site is designated Urban and Built-Up Land on the Department of Conservation Important Farmland map. There is no farmland or forestland in the vicinity of the Project site. Therefore, the Project would have ***no impact*** on agricultural land, forestland, or timberland.

III. Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.				
Would the Project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in a cumulatively considerable net increase in any criteria pollutant for which the Project region is a nonattainment area for an applicable federal or State ambient air quality standard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

The Project site is in the City in Santa Clara County, which is within the San Francisco Bay Area Air Basin (SFBAAB). Concentrations of ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide, lead, and particulate matter (PM₁₀ [particulate matter no more than 10 microns in diameter] and PM_{2.5} [particulate matter no more than 2.5 microns in diameter]) are commonly used as indicators of ambient air quality conditions. These pollutants are known as criteria pollutants and regulated by the U.S. Environmental Protection Agency (USEPA) and California Air Resources Board (CARB) through national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS), respectively. The NAAQS and CAAQS limit criteria pollutant concentrations to protect human health and prevent environmental and property damage. Other pollutants of concern in the Project area are nitrogen oxides (NO_x) and reactive organic gases (ROGs), which are precursors to O₃, and toxic air contaminants (TACs), which can cause cancer and other human health concerns.

Criteria pollutant concentrations in Santa Clara County and the SFBAAB are measured at several monitoring stations. The nearest station to the Project site is the San Jose-Jackson Street station, which is approximately 5 miles east of the site. Monitoring data in Table 3-1 show that the monitoring station near the Project site experienced no violations of CO and NO₂ standards between 2016 and 2018. There was one violation of the national 24-hour PM₁₀ standard in 2018, six violations of the national 24-hour PM_{2.5} standard in 2017, and 15 violations of the national 24-hour PM_{2.5} standard in 2018. In addition, there were three violations of the State 1-hour O₃ standard in 2017 and four violations of the State and national 8-hour O₃ standard in 2017.¹¹ Violations of the O₃ and particulate matter ambient air quality standards indicate that exposed individuals may experience certain health effects, including an increased incidence of cardiovascular and respiratory ailments.

¹¹ California Air Resources Board. 2019a. *iADAM: Air Quality Data Statistics*. Top 4 Summary. Available: <https://www.arb.ca.gov/adam/topfour/topfour1.php>. Accessed: December 19, 2019.

Table 3-1. Ambient Air Quality Monitoring Data

Pollutant and Standard	2016	2017	2018
Ozone (O₃)			
Maximum concentration, 1-hour period	0.087	0.121	0.078
Maximum concentration, 8-hour period	0.067	0.099	0.061
Fourth-highest concentration, 8-hour period	0.062	0.075	0.054
Days State 1-hour standard exceeded (0.09 ppm) ^a	0	3	0
Days State 8-hour standard exceeded (0.070 ppm) ^a	0	4	0
Days national 8-hour standard exceeded (0.070 ppm) ^a	0	4	0
Suspended Particulates (PM₁₀)			
Maximum State 24-hour concentration	41.0	69.8	121.8
Maximum national 24-hour concentration	40.0	69.4	155.8
Annual average concentration ^d	18.3	21.3	23.1
Days national standard exceeded (expected) (35 µg/m ³) ^a	0	0	1
Carbon Monoxide			
Maximum 8-hour concentration	1.4	1.8	2.1
Maximum 1-hour concentration	1.9	2.1	2.5
Number of days standard exceeded ^a			
NAAQS 8-hour standard (≥ 9 ppm)	0	0	0
CAAQS 8-hour standard (≥ 9.0 ppm)	0	0	0
NAAQS 1-hour standard (≥ 35 ppm)	0	0	0
Suspended Particulates (PM_{2.5})			
Maximum State 24-hour concentration ^b	22.7	49.7	133.9
Maximum national 24-hour concentration ^c	22.6	49.7	133.9
Annual average concentration ^d	8.4	*	12.9
Days national standard exceeded (35 µg/m ³) ^a	0	6	15
Nitrogen Dioxide (NO₂)			
Maximum 1-hour concentration	0.051	0.067	0.086
Annual average concentration	0.011	*	0.012
Days exceeding State standard (0.18 ppm) ^a	0	0	0
Days exceeding national standard (0.100 ppm) ^{a, e}	0	0	0

Sources: California Air Resources Board. 2019a. *iADAM: Air Quality Data Statistics*. Top 4 Summary. Available: <https://www.arb.ca.gov/adam/topfour/topfour1.php>. Accessed: December 19, 2019.

U.S. Environmental Protection Agency. 2019a. *Monitor Values Report*. Available: <https://www.epa.gov/outdoor-air-quality-data/monitor-values-report>. Accessed: December 19, 2019.

Notes: * = insufficient data; CAAQS = California ambient air quality standards; NAAQS = national ambient air quality standards; ppm = parts per million; µg/m³ = micrograms per cubic meter

^a. An exceedance is not necessarily a violation.

^b. State statistics are based on local conditions data. In addition, State statistics are based on California-approved samplers.

^c. National statistics are based on standard conditions data. In addition, national statistics are based on samplers, using federal reference or equivalent methods.

^d. State criteria for ensuring that the data are adequate for calculating valid annual averages are more stringent than the national criteria.

^e. Mathematical estimate of how many days the concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been truncated.

Local monitoring data are used to designate areas as nonattainment, maintenance, attainment, or unclassified areas, according to the ambient air quality standards. Santa Clara County is currently classified as a nonattainment area for the federal and State O₃ and PM_{2.5} standards and a nonattainment area for the State PM₁₀ standard.^{12,13} The Bay Area Air Quality Management District (BAAQMD) is responsible for ensuring that the NAAQS and CAAQS are met within the SFBAAB. BAAQMD manages air quality through a comprehensive program that includes long-term planning, regulations, incentives for technical innovation, education, and community outreach. The 2017 Clean Air Plan, approved by BAAQMD on April 19, 2017, provides an integrated strategy for reducing O₃, particulate matter, TACs, and greenhouse gas (GHG) emissions in a manner that is consistent with federal and State air quality programs and regulations.

Discussion

BAAQMD's CEQA Guidelines provide guidance for evaluating Project-level air quality impacts. The guidelines also contain thresholds of significance for O₃, CO, PM_{2.5}, PM₁₀, TACs, and odors.¹⁴ As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make checklist determinations. BAAQMD's proposed thresholds are supported by substantial evidence and well grounded in air quality regulation, scientific evidence, and scientific reasoning concerning air quality and GHG emissions. BAAQMD's Justification Report, found in Appendix D of BAAQMD's May 2017 CEQA Guidelines, explains the agency's reasoning and provides substantial evidence for developing and adopting its thresholds.¹⁵ Accordingly, BAAQMD's thresholds and guidance, as outlined in its CEQA Guidelines, are used to evaluate the significance of air quality impacts associated with the Project, as described further below.

Criteria Pollutants

BAAQMD's significance thresholds, as shown in Table 3-2, for criteria pollutants (ROGs, NO_x, PM₁₀, and PM_{2.5}) are based on the stationary-source emissions limits of the federal Clean Air Act (CAA) and BAAQMD Regulation 2, Rule 2. The federal New Source Review program, created by the federal CAA, set emissions limits to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of the NAAQS. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an NAAQS, BAAQMD Regulation 2, Rule 2, requires any new source that emits criteria air pollutants, above specified emissions limits, to offset those emissions. Although the emission limits are adopted in the regulation to control stationary-source emissions, the amount of emissions is the key determining factor, regardless of source, when addressing public health impacts of regional criteria pollutants. Thus, the emission limits are appropriate for the evaluation of land use development and construction activities as well as stationary sources. Those projects that would result in emissions below the thresholds would not be considered projects that would contribute to an existing or projected air quality violation or result in a considerable net increase in criteria pollutant emissions.

¹² California Air Resources Board. 2019b. *Area Designation Maps/State and National*. October. Available: <http://www.arb.ca.gov/desig/adm/adm.htm>. Accessed: December 19, 2019.

¹³ U.S. Environmental Protection Agency. 2019b. *Nonattainment Areas for Criteria Pollutants*. Last revised: February 28. Available: <https://www.epa.gov/green-book>. Accessed: December 19, 2019.

¹⁴ Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines*. May. Available: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: December 19, 2019.

¹⁵ Ibid.

Table 3-2. Bay Area Air Quality Management District Thresholds of Significance

Pollutant	Construction	Operations
ROGs	54 pounds/day	54 pounds/day or 10 tons/year
NO _x	54 pounds/day	54 pounds/day or 10 tons/year
CO	—	Violation of CAAQS
PM ₁₀ (exhaust)	82 pounds/day	82 pounds/day or 15 tons/year
PM _{2.5} (exhaust)	54 pounds/day	54 pounds/day or 10 tons/year
PM ₁₀ /PM _{2.5} (dust)	Best management practices	—
TACs (Project level)	Increased cancer risk of 10 in 1 million, increased non-cancer risk more than 1.0 (hazard index), PM _{2.5} increase more than 0.3 microgram per cubic meter	Same as construction
TACs (cumulative)	Increased cancer risk of 100 in 1 million, increased non-cancer risk more than 10.0, PM _{2.5} increase more than 0.8 microgram per cubic meter at receptors within 1,000 feet	Same as construction
Odors	—	Five complaints per year, averaged over 3 years

Source: Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines*. May. Available: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: December 19, 2019.

Notes: CAAQS = California ambient air quality standards; CO = carbon monoxide; NO_x = nitrogen oxide; PM 2.5 = particulate matter no more than 2.5 microns in diameter; PM₁₀ = particulate matter no more than 10 microns in diameter; ROGs = reactive organic gases; TACs = toxic air contaminants

Note that the federal New Source Review emissions limits and BAAQMD's offset limits are identified in the regulation on an annual basis (in tons per year). For construction activities, the limits are converted to average daily emissions (in pounds per day), as shown in Table 3-2, because of the short-term and intermittent nature of construction activities. If emissions would not exceed the average daily emission limits, the Project would not exceed the annual levels.

Toxic Air Contaminants

BAAQMD's TAC thresholds are based on the cancer and non-cancer risk limits for the new and modified sources adopted in BAAQMD Regulation 2, Rule 5, and the USEPA's significant impact level (SIL) for PM_{2.5} concentrations. The USEPA SIL is a measure of whether a source may cause or contribute to a violation of the NAAQS. Health risks due to TACs from construction, though temporary, can still result in substantial public health impacts because of increased cancer and non-cancer risks. Applying quantitative thresholds allows a rigorous standardized method to be used to determine when a construction project will cause a significant increase in cancer and non-cancer risks. The cumulative health risk thresholds are based on USEPA guidance for conducting TAC analyses and making risk management decisions at the facility and community levels. The cumulative health risk thresholds are also consistent with the ambient cancer risk in the most pristine portions of the Bay Area and based on

BAAQMD's recent regional modeling analysis as well as the non-cancer mandatory risk reduction levels for hot spots with toxic air.¹⁶

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens, based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur; cancer risk is expressed as excess cancer cases per 1 million exposed individuals, typically over a lifetime of exposure. Non-carcinogenic substances differ in that there is generally assumed to be a safe level of exposure, below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Acute and chronic exposure to non-carcinogens is expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level.¹⁷ BAAQMD's TAC thresholds are presented in Table 3-2 and used to support the health risk assessment for the Project.

Odors

BAAQMD's odor threshold is based on Regulation 7 and reflects the most stringent standard derived from BAAQMD's rules and regulations.

a. Conflict with or obstruct implementation of the applicable air quality plan? (Less than Significant)

The CAA requires a State Implementation Plan (SIP) or an air quality control plan to be prepared for areas with air quality that violates the NAAQS. The SIP sets forth the strategies and pollution control measures that states use to attain the NAAQS. The California CAA requires attainment plans to demonstrate a 5 percent reduction per year in nonattainment air pollutants or their precursors, averaged every consecutive 3-year period, unless an approved alternative measure of progress is developed. Air quality attainment plans (AQAPs) outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date. The current AQAP for the SFBAAB is the 2017 Clean Air Plan.

The 2017 Clean Air Plan contains 85 control measures to address several pollutants: O₃ precursors, particulate matter, air toxics, and/or GHGs. These control strategies can be grouped into the following categories:

- Stationary-source measures,
- Transportation control measures,
- Energy control measures,
- Building control measures,
- Agricultural control measures,
- Natural and working lands control measures,
- Waste management control measures,

¹⁶ Bay Area Air Quality Management District. 2009. *California Environmental Quality Act Guidelines Update: Proposed Thresholds of Significance*. December. Available: <https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/proposed-thresholds-of-significance-dec-7-09.pdf?la=en>. Accessed: January 24, 2020.

¹⁷ Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines*. May. Available: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: December 19, 2019.

- Water control measures, and
- Super GHG control measures.

As described below in Section XI, *Land Use and Planning*, the Project would be consistent with the goals and policies of the General Plan. The Project would result in land uses that would be consistent with the land uses permitted for the Project area under the General Plan. Because the Project's land uses are accounted for in the General Plan, the Project would be consistent with the growth anticipated in the 2017 Clean Air Plan and the primary goals of the 2017 Clean Air Plan. Furthermore, as discussed in Section XVII, *Transportation*, because of the proximity of public transit, including Caltrain and Santa Clara Valley Transportation Authority (VTA) bus routes, no significant increase in traffic is anticipated with Project implementation. In addition, as discussed under impacts b. through d., below, the Project would implement mitigation and control measures to reduce criteria air pollutant emissions during construction, and the Project would not result in any significant and unavoidable air quality impact. Accordingly, the Project supports the primary goals of the 2017 Clean Air Plan, including relevant control measures, and does not interfere with implementation of 2017 Clean Air Plan control measures; this impact would be ***less than significant***.

b. Result in a cumulatively considerable net increase in any criteria pollutant for which the Project region is a nonattainment area for an applicable federal or State ambient air quality standard? (Less than Significant with Mitigation)

To assist lead agencies in determining whether a project would exceed the criteria air pollutant significance thresholds shown in Table 3-2, BAAQMD developed screening criteria as part of its CEQA Guidelines. In developing these thresholds, BAAQMD considered levels at which a project's emissions would be cumulatively considerable. As noted in the agency's CEQA Guidelines:

In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels at which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions are cumulatively considerable, resulting in significant adverse air quality impacts on the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary.

Consequently, exceedances of project-level thresholds would be cumulatively considerable. If a project meets the screening criteria, then construction of the project would result in less than significant cumulative criteria air pollutant impacts. A project that exceeds the screening criteria may require a detailed air quality assessment to determine whether criteria air pollutant emissions would exceed significance thresholds. The CEQA Guidelines note that the screening levels are generally representative of new development on greenfield¹⁸ sites, without any form of mitigation measures taken into consideration. In addition, the screening criteria do not account for project design features, attributes, or local development requirements that could also result in lower emissions.

Construction

The Project includes construction of a three- and four-story apartment with 225 new dwelling units, for a net increase of 183 new dwellings. Table 3-3 presents BAAQMD's screening-level sizes for an applicable mid-rise (i.e., three- to 10-story) apartment and compares them with respect to the Project. As indicated in

¹⁸ *Greenfield* refers to an agricultural site, forestland, or an undeveloped site that has been earmarked for commercial, residential, or industrial projects.

Table 3-3, the Project would be below BAAQMD's screening-level sizes for a mid-rise apartment (240 dwelling units).

Table 3-3. BAAQMD Construction Criteria Air Pollutant and Precursor Screening-Level Sizes

Land Use Type	Project Size	Construction Pollutant Screening Size	Criteria Screening Size	Exceeds Screening Size?	Construction Screening Size?
Apartment, mid-rise	225 dwelling units	240 dwelling units		No	

Construction of the Project would include demolition of three of the two-story apartment buildings on the site and partial demolition of an additional two-story apartment building, along with two of the one-story accessory buildings and four carport structures. According to BAAQMD's CEQA Guidelines, if a construction project involves demolition, construction-related emissions of criteria pollutants should be quantified and compared to the construction-related thresholds shown in Table 3-2. Therefore, the criteria pollutant emissions that would be generated during demolition and construction of the Project were quantified using the California Emissions Estimator Model (CalEEMod), version 2016.3.2.

CalEEMod was run with model default values for some construction parameters, such as the type of construction equipment and level of activity. The construction schedule (i.e., construction-phase start and end dates), the number of daily workers per construction phase, the amount of material imported and exported, and the number of acres to be graded and paved at the Project site were provided by the Project Sponsor. The six phases of construction are 1) demolition, 2) site preparation, 3) grading, 4) building construction, 5) paving, and 6) architectural coatings. Estimated unmitigated construction emissions would be short term, occurring over approximately 24 months.

Table 3-4 summarizes the results of the unmitigated emissions modeling. Model outputs are provided in Appendix A.

Table 3-4. Estimated Unmitigated Criteria Pollutant Emissions from Construction (pounds per day)

Construction Year	ROGs	NO _x	CO	PM10		PM2.5	
				Dust	Exhaust	Dust	Exhaust
2020	6	87	40	18	2	10	2
2021	3	20	21	2	1	< 1	1
2022	46	18	21	2	1	< 1	1
<i>BAAQMD Threshold</i>	<i>54</i>	<i>54</i>	<i>—</i>	<i>BMPs</i>	<i>82</i>	<i>BMPs</i>	<i>54</i>
<i>Exceed Threshold?</i>	<i>No</i>	<i>Yes</i>	<i>—</i>	<i>—</i>	<i>No</i>	<i>—</i>	<i>No</i>

BAAQMD = Bay Area Air Quality Management District; BMPs = best management practices; CO = carbon monoxide; NO_x = nitrogen oxide; PM2.5 = particulate matter no more than 2.5 microns in diameter; PM10 = particulate matter no more than 10 microns in diameter; ROGs= reactive organic gases

As shown in Table 3-4, construction of the Project would not generate ROGs or particulate matter exhaust in excess of BAAQMD's numeric thresholds. However, the Project would generate NO_x in excess of BAAQMD's significance threshold in 2020. These emissions, if left unmitigated, could contribute to a ground-level formation of O₃ in the SFBAAB, which, at certain concentrations, could contribute to short- and long-term human health effects. Santa Clara County does not currently attain the O₃ CAAQS and NAAQS (see Table 3.2-2). Certain individuals residing in areas that do not meet the ambient air quality standards, including Santa Clara County, could be exposed to pollutant concentrations that could cause or

aggravate acute and/or chronic health conditions (e.g., asthma, premature mortality). Although construction of the Project would contribute to future NO_x emissions, maximum daily construction-generated NO_x emissions represent approximately 0.01 percent of total NO_x in the SFBAAB.¹⁹ As previously discussed, the magnitude and location of any potential change in ambient air quality, and thus health consequences, from additional emissions cannot be quantified with a high level of certainty because of the dynamic and complex nature of pollutant formation and distribution. However, it is known that public health will continue to be affected in Santa Clara County so long as the region does not attain the CAAQS or NAAQS.

Implementation of Mitigation Measure M-AQ-1 would reduce construction-related NO_x emissions to below BAAQMD's NO_x thresholds, as shown in Table 3-5. BAAQMD's CEQA Guidelines consider fugitive dust impacts to be less than significant with application of best management practices (BMPs). If BMPs are not implemented, then the dust impacts would be potentially significant. Therefore, Mitigation Measure M-AQ-2, which includes BMPs to reduce fugitive dust, would be implemented to reduce impacts from construction-related fugitive dust emissions, including any cumulative impacts. As such, construction of the Project would not be expected to contribute a significant level of air pollution such that air quality within the SFBAAB would be degraded. Consequently, the impact from construction-generated criteria pollutant emissions would be ***less than significant with mitigation***. Such emissions would not expose receptors to substantial pollutant concentrations or risks.

Table 3-5. Estimated Mitigated Criteria Pollutant Emissions from Construction (pounds per day)

Construction Year	ROGs	NO _x	CO	PM10		PM2.5	
				Dust	Exhaust	Dust	Exhaust
2020	2	40	41	9	< 1	5	< 1
2021	1	5	22	2	< 1	< 1	< 1
2022	45	4	22	2	< 1	< 1	< 1
<i>BAAQMD Threshold</i>	<i>54</i>	<i>54</i>	<i>—</i>	<i>BMPs</i>	<i>82</i>	<i>BMPs</i>	<i>54</i>
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>—</i>	<i>—</i>	<i>No</i>	<i>—</i>	<i>No</i>

BAAQMD = Bay Area Air Quality Management District; BMPs = best management practices; CO = carbon monoxide; NO_x = nitrogen oxide; PM2.5 = particulate matter no more than 2.5 microns in diameter; PM10 = particulate matter no more than 10 microns in diameter; ROGs= reactive organic gases

Mitigation Measure M-AQ-1: Use Clean Diesel-Powered Equipment during Construction to Control Construction-Related NO_x Emissions.

The Project Sponsor shall ensure that all off-road diesel-powered equipment used during construction is equipped with USEPA Tier 4 Final engines. The construction contractor shall submit evidence of the use of USEPA Tier 4 Final engines or cleaner for Project construction to the City prior to the commencement of construction activities.

¹⁹ SFBAAB 2015 NO_x emissions reported in the Clean Air Plan totaled 300 tons per day (Bay Area Air Quality Management District 2017a). Maximum Project-generated NO_x emissions would be 87 pounds per day, which equates to 0.0435 ton per day.

Mitigation Measure M-AQ-2: Implement BAAQMD Basic Construction Mitigation Measures.

The Project Sponsor shall require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD. The emissions reduction measures shall include, at a minimum, the following:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, unpaved access roads) shall be watered two times a day.
- All haul trucks shall be covered when transporting soil, sand, or other loose material offsite.
- All visible mud or dirt track-out material on adjacent public roads shall be removed using wet-power vacuum-type street sweepers at least once a day. The use of dry-power sweeping is prohibited.
- All vehicle speeds shall be limited to 15 miles per hour on unpaved roads.
- All roadways, driveways, and sidewalks that are to be paved shall be paved as soon as possible. Building pads shall be laid as soon as possible after grading, unless seeding or a soil binder is used.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified visible-emissions evaluator.
- 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).
- Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Operation

BAAQMD has developed operational criteria air pollutant screening-level criteria. A project that exceeds the operational screening criteria may require a detailed air quality assessment to determine whether criteria air pollutant emissions would exceed significance thresholds. If a project meets the screening criteria, then operation of the project would result in less than significant criteria air pollutant impacts.

As indicated in Table 3-6, the Project would be below the operational screening-level size for an applicable mid-rise (i.e., three- to 10-story) apartment (494 dwelling units). Consequently, the Project would meet the screening criteria, and a quantitative analysis is not required.

Table 3-6. BAAQMD Operational Criteria Air Pollutant and Precursor Screening-Level Sizes

Land Use Type	Project Size	Operational Criteria Pollutant Screening Size	Exceeds Operational Screening Size?
Apartment, mid-rise	225 dwelling units (183 net new units)	494 dwelling units	No

BAAQMD's guidelines do not include a screening-level size for parking structures. Parking structures emit criteria pollutants from vehicle trips and area sources (e.g., architectural coatings, consumer products, landscaping equipment). The intensification in residential land use, rather than the parking structure itself, would generate the new vehicle trips associated with the Project. Therefore, the new parking structure itself is not anticipated to generate new vehicle trips, relative to existing conditions and would not result in any additional criteria pollutants from mobile sources. Based on CalEEMod defaults and a parking structure size of 180,000 sf, area-source emissions would not exceed BAAQMD thresholds. Thus, the Project, which involves construction of a residential building with an associated parking structure, would meet the screening criteria and would not result in the generation of operational criteria pollutants or precursors that would exceed BAAQMD's thresholds of significance. Similarly, the new parking structure would result in minor emissions but would not exceed BAAQMD's thresholds. The Project would have a ***less than significant*** impact on air quality during operation. It would not contribute a significant level of air pollution that would degrade regional air quality within the SFBAAB.

c. Expose sensitive receptors to substantial pollutant concentrations? (Less than Significant with Mitigation)

Sensitive receptors are typically defined as facilities with children, the elderly, people with illnesses, or others who are sensitive to the effects of air pollution. Examples of sensitive receptors include residences, hospitals, schools, parks, day care centers, and senior facilities. Sensitive land uses in the vicinity of the Project site include residences (onsite and adjacent to the Project site), schools (Monticello Academy, Neighborhood Christian Center, Stratford Schools Santa Clara), and a park (Homeridge Park, which is more than a half mile away). The primary pollutants of concern with regard to health risks for sensitive receptors are criteria pollutants (including localized CO hot spots), asbestos, diesel particulate matter, and exhaust with PM_{2.5}. Each of these pollutants, including the potential impact on nearby receptors, is analyzed in the following paragraphs.

Criteria Pollutants

As discussed above, BAAQMD has developed region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment designations under the NAAQS and CAAQS. The NAAQS and CAAQS are informed by a wide range of scientific evidence that demonstrates that there are known safe concentrations of criteria pollutants. Although recognizing that air quality is a cumulative problem, BAAQMD considers the impacts of projects that generate criteria pollutant and O₃ precursor emissions that are below the thresholds to be minor in nature. Such projects would not adversely affect air quality or cause the NAAQS or CAAQS to be exceeded.

As shown in Table 3-5, construction of the Project would not generate regional criteria pollutants in excess of BAAQMD thresholds with implementation of Mitigation Measure M-AQ-1, which requires the use of Tier 4 Final off-road construction equipment, and Mitigation Measure M-AQ-2, which requires implementation of all feasible dust control measures, effectively reducing localized fugitive dust emissions during construction by 75 percent.²⁰ As such, construction of the Project would not be expected to contribute a significant level of air pollution that would degrade air quality within the SFBAAB. Consequently, the impact from construction-generated criteria pollutant emissions would be ***less than***

²⁰ Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines*. May. Available: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf?la=en. Accessed: December 19, 2019.

significant with mitigation. The Project would not expose receptors to substantial pollutant concentrations or risks.

As described above, operation of the Project would meet the screening criteria and would not result in the generation of operational criteria pollutants or precursors that would exceed BAAQMD's thresholds of significance. Consequently, the impact from operations-generated criteria pollutant emissions would be **less than significant**. The Project would not expose receptors to substantial pollutant concentrations or risks.

Localized CO Hot Spots

Continuous engine exhaust may elevate localized CO concentrations, resulting in "hot spots." Receptors exposed to these CO hot spots may have a greater likelihood of developing adverse health effects. CO hot spots are typically observed at heavily congested intersections where a substantial number of gasoline-powered vehicles idle for prolonged durations throughout the day.

Peak-hour traffic volumes at intersections in the Project vicinity were analyzed to determine whether the Project would meet BAAQMD screening criteria. Traffic volumes in the PM Peak Hour under existing conditions at the intersections of Homestead Road/San Tomas Expressway and Homestead Road/Lawrence Expressway are identified as:

1. Homestead Road/San Tomas Expressway: 15,974 vehicles per hour
2. Homestead Road/Lawrence Expressway: 11,950 vehicles per hour

The maximum traffic volumes at the intersection under all scenarios would be well below the 44,000-vehicle-per-hour screening threshold. Also, the intersection volume under all scenarios would be below 24,000; therefore, there would be no exceedance of either the limited vertical/horizontal mixing threshold (24,000 vehicles per hour) or the non-limited mixing threshold (44,000 vehicles per hour).

The two intersections currently operate at an acceptable level of service (LOS),²¹ and the additional Project trips²² would not cause the intersections to operate below VTA's standard. Consequently, the Project would be consistent with the applicable congestion management plan and would not result in an exceedance of BAAQMD screening criteria. Furthermore, CO concentrations would not exceed the CAAQS. This impact would be **less than significant**.

Asbestos

Asbestos is a naturally occurring mineral that was once used in construction because of its heat resistance and strong insulating properties. Exposure to asbestos, however, has been shown to cause many disabling or fatal diseases, including lung cancer, mesothelioma, and pleural plaques. Demolition of the buildings on the Project site could expose workers and nearby receptors to asbestos if the material was used during construction of the original buildings. However, the Project would comply with BAAQMD Regulation 11, Rule 2, Asbestos, Demolition, Renovation, and Manufacturing. The purpose of the rule is to control emissions of asbestos to the atmosphere during demolition and building renovation. Because the Project

²¹ Santa Clara Valley Transportation Authority. 2017. *2017 CMP, 2017 Congestion Management Program Document*. December. Available: http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site_Content/2017_CMP_Document.pdf. Accessed: January 3, 2020.

²² Hexagon Transportation Consultants, Inc. 2019. *Trip Generation Analysis for the Proposed Project Located at 3131 Homestead Road in Santa Clara, California*. July 22.

Sponsor would be required to control asbestos emissions according to BAAQMD regulations, impacts associated with asbestos emissions would be ***less than significant***.

Construction-generated Diesel Particulate Matter and Localized PM_{2.5}

Cancer health risks from exposure to diesel particulate matter are typically associated with chronic exposure (30-year exposure period). BAAQMD has determined that construction activities occurring more than 1,000 feet from a sensitive receptor most likely do not pose a significant health risk. There are sensitive land uses (residences and schools) within 1,000 feet of the Project site, including onsite residences. Accordingly, a health risk assessment (HRA) was undertaken to assess inhalation cancer risks, non-cancer hazard impacts, and PM_{2.5} concentrations, as recommended in BAAQMD's CEQA Guidelines.

During construction activities, diesel particulate matter and PM_{2.5} emissions would be generated by heavy-duty off-road equipment as well as on-road vehicles. The HRA was prepared consistent with guidance from USEPA; the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment; and BAAQMD. More specifically, the HRA relied on USEPA's most recent dispersion model, AERMOD (version 19191). Calculations of acute and chronic cancer risks relied on the assessment values developed from the Office of Environmental Health Hazard Assessment's *Air Toxics Hot-spots Program, Risk Analysis Guidelines*;²³ BAAQMD's *Recommended Methods for Screening and Modeling Local Risks and Hazards*;²⁴ and BAAQMD's *Air Toxics NSR Program Health Risk Assessment Guidelines*.²⁵ Refer to Appendix A for more detailed modeling assumptions and AERMOD outputs.

Table 3-7 presents the maximum unmitigated construction-related health risks for the three (onsite residential) receptors that would receive the highest concentrations of construction-related diesel particulate matter and PM_{2.5} within 1,000 feet of the Project site. As shown in Table 3-7, the effect of unmitigated Project construction emissions would result in a significant increase in the cancer risk and annual PM_{2.5} concentrations at these receptor locations, although the chronic hazard index would be below BAAQMD's significance threshold. As shown in Table 3-8, implementation of Mitigation Measures M-AQ-1 and M-AQ-2 would reduce construction emissions. As a result, both the cancer risk and PM_{2.5} concentrations would be below BAAQMD's significance thresholds. Therefore, impacts would be ***less than significant with mitigation***.

²³ Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot-spots Program, Risk Analysis Guidelines*. Guidance Manual for Preparation of Health Risk Assessments. February. Available: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed: January 3, 2020.

²⁴ Bay Area Air Quality Management District. 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. Available: <http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en>. Accessed: January 3, 2020.

²⁵ Bay Area Air Quality Management District. 2016. *Air Toxics NSR Program Health Risk Assessment Guidelines*. December. Available: https://www.baaqmd.gov/~media/files/planning-and-research/permit-modeling/hra_guidelines_12_7_2016_clean-pdf.pdf?la=en. Accessed: January 3, 2020.

Table 3-7. Estimated Project-level Cancer and Chronic Hazard Risks from Unmitigated Construction Diesel Particulate Matter and PM2.5 Emissions

Receptor	Cancer Risk (cases per million)	Non-Cancer Hazard Index	Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$)
Maximally affected residence	115	0.1	0.6
Second-highest affected residence	113	0.1	0.6
Third-highest affected residence	111	0.1	0.6
<i>Significance Threshold</i>	<i>10</i>	<i>1.0</i>	<i>0.3</i>
<i>Exceed Threshold?</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; PM 2.5 = particulate matter no more than 2.5 microns in diameter

Table 3-8. Estimated Project-level Cancer and Chronic Hazard Risks from Mitigated Construction Diesel Particulate Matter and PM2.5 Emissions

Receptor	Cancer Risk (cases per million)	Non-Cancer Hazard Index	Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$)
Maximally affected residence	7	< 0.1	0.2
Second-highest affected residence	7	< 0.1	0.2
Third-highest affected residence	7	< 0.1	0.2
<i>Significance Threshold</i>	<i>10</i>	<i>1.0</i>	<i>0.3</i>
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; PM 2.5 = particulate matter no more than 2.5 microns in diameter

Cumulative Construction-generated Diesel Particulate Matter and Localized PM2.5

According to BAAQMD's CEQA Guidelines, combined risk levels should be determined for all TAC sources within 1,000 feet of a project site, and the combined risk levels should be compared to BAAQMD's cumulative health risk thresholds.²⁶ This analysis is presented in the following paragraphs.

Nearby TAC sources and Project construction could contribute to a cumulative health risk for sensitive receptors near the Project site. GIS raster files, Google Earth map files, and distance multipliers provided by BAAQMD^{27, 28} were used to estimate excess impacts for existing roadway and railway sources. No existing stationary sources were identified within 1,000 feet of the Project site. The methods used to estimate Project-related TAC emissions are described above and in Appendix A. The results of the cumulative impact assessment are summarized in Table 3-9. Individual source contributions are provided in Appendix A.

²⁶ Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines*. May. Available: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf?la=en. Accessed: January 3, 2020.

²⁷ Winkel, Jackie. Principal environmental planner, Bay Area Air Quality Management District. April 12, 2018—email to Darrin Trageser, ICF, Sacramento, CA, regarding GIS files containing background health risks from rail, major roads, and highway sources within BAAQMD jurisdiction.

²⁸ Flores, Areana. Environmental planner, Bay Area Air Quality Management District. January 2, 2020—email to Darrin Trageser, ICF, Sacramento, CA, regarding stationary-source health risk data for areas within 1,000 feet of the Project site.

Table 3-9. Cumulative Toxic Air Contaminant Health Risks from Project and Background Sources

Sensitive Receptor	Increased Cancer Risk (per million) (unmitigated/ mitigated)	Non-Cancer Hazard Index (unmitigated/ mitigated)	PM2.5 Exposure ($\mu\text{g}/\text{m}^3$) (unmitigated/ mitigated)
Contribution from Existing Sources			
Maximally affected residence	16	< 0.1	0.3
Second-highest affected residence	16	< 0.1	0.3
Third-highest affected residence	16	< 0.1	0.3
Contribution from Project Construction			
Maximally affected residence	<u>115</u> /7	0.1/< 0.1	0.6/0.2
Second-highest affected residence	<u>113</u> /7	0.1/< 0.1	0.6/0.2
Third-highest affected residence	<u>111</u> /7	0.1/< 0.1	0.6/0.2
Cumulative Totals			
Maximally affected residence	<u>131</u> /23	0.1/< 0.1	<u>0.9</u> /0.5
Second-highest affected residence	<u>129</u> /23	0.1/< 0.1	<u>0.9</u> /0.5
Third-highest affected residence	<u>127</u> /23	0.1/< 0.1	<u>0.9</u> /0.5
<i>BAAQMD Thresholds</i>	<i>100</i>	<i>10</i>	<i>0.8</i>
Notes:			
NA = not available; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter			
Exceedances denoted with underline.			

As shown in Table 3-9, the cumulative hazard index at the three receptors with the highest impact would not exceed BAAQMD's threshold. However, the unmitigated cumulative PM2.5 concentrations and cancer risks would exceed BAAQMD thresholds at the three receptors that would receive the highest concentrations of construction-related diesel particulate matter and PM2.5. The contribution of unmitigated cancer risks from the Project would exceed BAAQMD's cumulative cancer risk threshold. The Project's contribution to PM2.5 concentrations, in conjunction with existing PM2.5 concentrations, would exceed BAAQMD's cumulative annual PM2.5 concentration threshold. This is considered a potentially significant cumulative impact. However, as shown in Table 3-9, implementation of Mitigation Measures M-AQ-1 and M-AQ-2 would reduce construction emissions. As a result, both the cancer risk and PM2.5 concentrations would be below BAAQMD's cumulative thresholds. Therefore, impacts would be ***less than significant with mitigation***.

Operational Diesel Particulate Matter and Localized PM2.5

The Project is not expected to represent a significant source of operational diesel particulate matter because traffic to or from the site would consist primarily of light-duty vehicles, which are not emitters of substantial volumes of diesel particulate matter. In addition, an emergency generator is not anticipated to be necessary for Project operations. Therefore, the Project would not result in an appreciable increase in health risks from diesel particulate matter or PM2.5 exhaust during operation. This impact would be ***less than significant***.

d. Result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people? (Less than Significant)

Although offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public. In addition, they often generate citizen complaints to local governments and air districts. According to CARB's *Air Quality and Land Use Handbook*, land uses associated with odor complaints typically include sewage treatment plants, landfills, recycling facilities, and manufacturing plants.²⁹ Odor impacts on residential areas and other sensitive receptors, such as hospitals, day care centers, and schools, warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, work sites, and commercial areas.

Odors during construction could emanate from diesel exhaust, asphalt paving, and architectural coatings. However, construction activities near existing receptors would be temporary and would not result in nuisance odors that would violate BAAQMD Regulation 7. Odors during operation could emanate from vehicle exhaust and the reapplication of architectural coatings. However, odor impacts would be limited to circulation routes, parking areas, and areas immediately adjacent to recently painted structures. Although such brief exhaust- and paint-related odors may be considered adverse, they would not affect a substantial number of people. Because the Project is not anticipated to result in substantial or long-term odors, this impact would be ***less than significant***.

²⁹ California Air Resources Board. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April.

IV. Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The Project site and surrounding area is characterized by urban development, including surface streets interspersed with landscaped areas with ornamental vegetation. Because the Project site is completely developed, it does not contain natural land cover or communities, protected wetlands and waters,³⁰ riparian habitat, or other sensitive natural communities.³¹ The onsite ornamental vegetation is not a sensitive natural community, as indicated by the California Department of Fish and Wildlife Sensitive Natural Communities List.³² The water features (i.e., ponds and channels) within the Project site, which are rock and concrete lined and without vegetation, were created for landscaping purposes and are not

³⁰ U.S. Fish and Wildlife Service. 2019. *National Wetland Inventory*. October 8. Available: <https://www.fws.gov/wetlands/Data/Data-Download.html/>. Accessed: January 16, 2020.

³¹ California Department of Fish and Wildlife. 2019. *California Sensitive Natural Communities*. November 8. Available: <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>. Accessed: January 16, 2020.

³² Ibid.

protected. The nearest neighborhood park, Homeridge Park, is approximately 0.60 mile south of the Project site; the nearest naturally occurring water body, Saratoga Creek, is 0.13 mile (675 feet) southeast of the Project site.

This biological resources impact analysis is based on a desktop review of relevant sources of information and a field visit. The study area for biological resources is the Project area plus a 250-foot buffer. The area for direct impacts is the Project footprint. The area for indirect impacts includes the Project footprint plus the 250-foot buffer.

The desktop review included an evaluation of the following sources:

- California Natural Diversity Database³³ (CNDDDB) species list query for the U.S. Geological Survey Cupertino and San Jose West 7.5-minute quadrangles;
- California Native Plant Society³⁴ species list query for the U.S. Geological Survey San Jose West 7.5-minute quadrangle;
- U.S. Fish and Wildlife Service³⁵ Information for Planning and Consultation (IPaC) query for Santa Clara County;
- HortScience Bartlett Consulting 2018 *Arborist Report*³⁶ (Appendix B);
- *City of Santa Clara 2010–2035 General Plan*;³⁷
- National Wetland Inventory and USEPA for the identification of waters and wetlands, using existing water/wetland inventory data;^{38,39} and
- Google Earth for aerial imagery.⁴⁰

ICF biologist Ross Wilming conducted a site visit on January 15, 2020. The purpose of the field visit was to identify habitat types, including natural⁴¹ and sensitive⁴² communities, within or adjacent to the Project

³³ California Department of Fish and Wildlife. 2020. *California Natural Diversity Database RareFind Records Search of Cupertino and San Jose West U.S. Geological Survey 7.5-minute Quadrangles*. RareFind Version 5. Available: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed: January 30, 2020.

³⁴ California Native Plant Society. 2019. *Online Inventory of Rare and Endangered Plants of California*. Available: http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi/Html?item=checkbox_9.htm. Accessed: January 16, 2020.

³⁵ U.S. Fish and Wildlife Service. 2019. *IPaC Species List*. Available: <https://ecos.fws.gov/ipac/>. Accessed: January 16, 2020.

³⁶ HortScience Bartlett Consulting. 2018. *Arborist Report*. Prepared for Kier & Wright, Livermore, CA.

³⁷ City of Santa Clara. 2014. *City of Santa Clara 2010–2035 General Plan*. December 9, 2014. Available: <http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan>. Accessed: January 16, 2020.

³⁸ U.S. Fish and Wildlife Service. 2019. *National Wetland Inventory*. October 8. Available: <https://www.fws.gov/wetlands/>. Accessed: January 16, 2020.

³⁹ U.S. Environmental Protection Agency. 2020. *WATERS GeoViewer*.

⁴⁰ Google Earth Pro, 3131 Homestead Road, 37°20'20.33"N and 121°59'05.32"W, 2018. Accessed: January 14, 2020.

⁴¹ Natural habitat is defined as habitat that has not been planted/landscaped or dominated by non-native species (California Department of Fish and Wildlife. 2019. *California Sensitive Natural Communities*. November 8).

⁴² *Sensitive natural communities* are defined as habitats/communities with greater environmental concern in California, based on their rarity and existing threats and stressors (California Department of Fish and Wildlife. 2019. *California Sensitive Natural Communities*. November 8).

site, investigate onsite conditions, and characterize potential regulated⁴³ plant and wildlife habitats that may be present. The biologist walked the entire Project area to collect information related to the biological resources identified during the desktop review. The biologist also noted general site conditions, relevant features, and documented all wildlife and plant species observed during the site visit (Table 3-10).

Table 3-10. Wildlife and Plant* Species Observed during the Site Visit

Common Name	Scientific Name**
Birds	
American crow	<i>Corvus brachyrhynchos</i>
American robin	<i>Turdus migratorius</i>
Anna's hummingbird	<i>Calypte anna</i>
Black phoebe	<i>Sayornis nigricans</i>
Bushtit	<i>Psaltiriparus minimus</i>
California scrub-jay	<i>Aphelocoma californica</i>
California towhee	<i>Melospiza crissalis</i>
Canada goose	<i>Branta canadensis</i>
Chestnut-backed chickadee	<i>Poecile rufescens</i>
Dark-eyed junco	<i>Junco hyemalis</i>
House finch	<i>Haemorhous mexicanus</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning dove	<i>Zenaidura macroura</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Rock dove	<i>Columba livia</i>
Mammals	
Western gray squirrel	<i>Sciurus griseus</i>
Plants	
African lily, Lily of the Nile	<i>Agapanthus</i> sp.
Cypress	<i>Cypripedium</i> sp.
English ivy	<i>Hedera helix</i>
Iris	<i>Iris</i> sp.
Mallow	<i>Malva</i> sp.
Phormium	<i>Phormium</i> sp.
Prickly sow-thistle	<i>Sonchus asper</i>
Rose	<i>Rosa</i> sp.
Spanish lavender	<i>Lavandula stoechas</i>

* Trees observed onsite that are documented in the Project's arborist report are not included in this list (Appendix B).

** Unknown species, or "sp.," because the ornamental plant species could not be identified; genus is listed.

⁴³ Any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Discussion

- a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (Less than Significant)**

Because the Project site and surrounding area are composed entirely of residential and commercial developments and no sensitive natural community is present on the Project site or in the immediate vicinity, the Project site does not provide suitable foraging or breeding habitat for any special-status species, except pallid bat, which may forage over the area on rare occasions. In addition, because of the abundance of similar landscaped foraging habitat in the surrounding area, it is considered unlikely that pallid bats would be present at the Project site. There are also no CNDDDB⁴⁴ occurrences for pallid bat within 3.85 miles of the Project site; the nearest CNDDDB occurrences for pallid bat, occurrences #253 and #255, are approximately 3.85 miles east and 5.95 miles northwest of the Project site, respectively. Therefore, impacts on pallid bat foraging habitat are not considered substantial. The Project would have a **less than significant** impact on special-status species.

- b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (No Impact)**

The Project site and surrounding area are composed entirely of residential and commercial developments. No riparian habitat or other sensitive natural community is present on the Project site or in the immediate vicinity; the nearest riparian habitat is approximately 0.13 mile (675 feet) southeast of the Project site, an area associated with Saratoga Creek. Therefore, the Project would have **no impact** on riparian habitat or other sensitive natural communities.

- c. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means? (No Impact)**

No federally protected wetlands or other jurisdictional waters are present on the Project site or in the immediate vicinity. The water features (i.e., ponds and channels) on the Project site were created for landscaping purposes; the water features are rock and concrete lined and lack vegetation. The nearest federally protected wetlands in proximity to the Project site are the riverine habitat located approximately 0.13 mile (675 feet) southeast of the Project site at Saratoga Creek and the man-made, freshwater pond located approximately 0.45 mile (2,415 feet) northeast of the Project site in Central Park.

⁴⁵ Therefore, the Project would have **no impact** on State or federally protected wetlands.

⁴⁴ California Department of Fish and Wildlife. 2020. *California Natural Diversity Database RareFind Records Search of Cupertino and San Jose West U.S. Geological Survey 7.5-minute Quadrangles*. RareFind Version 5. Available: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed: January 30, 2020.

⁴⁵ U.S. Fish and Wildlife Service. 2019. *National Wetland Inventory*. October 8. Available: <https://www.fws.gov/wetlands/Data/Data-Download.html/>. Accessed: January 16, 2019.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Less than Significant with Mitigation)

The 457 trees on the Project site are located along pathways and between buildings. Of the 457 trees, 255 would be removed and 202 would remain. Up to 327 new trees would be planted throughout the Project site, for a total of approximately 510 trees onsite. In addition, shrubs and ground cover would be planted throughout the Project site.

No wetlands or running waters are present in the vicinity of the Project site; therefore, the Project would not affect fish movement. All Project activities would occur within an already-developed footprint that is surrounded by development. Therefore, the Project would not result in fragmentation within natural habitats that would interfere with the movement of wildlife. Any common urban-adapted species that currently move through the Project site would continue to be able to do so following construction.

If the Project is implemented during the nesting season (February 1 to August 31), tree and structure removal could result in “take” (i.e., direct mortality of adult or young birds, the destruction of active nests, and/or disturbance of nesting adults, with associated nest abandonment and/or loss of reproductive effort). However, native bird species are protected by both State (California Fish and Game Code Sections 3503 and 3513) and federal (Migratory Bird Treaty Act [MBTA] of 1918) laws. Any disturbance of nesting birds that results in the abandonment of active nests or litters or the loss of active nests through vegetation or structure removal would be a significant impact. Therefore, the Project would implement the mitigation measure below to reduce potential impacts on nesting birds and comply with the California Fish and Game Code and the MBTA. Impacts as a result of the Project would be ***less than significant with mitigation***.

Mitigation Measure M-BI-1: Bird Nest Preconstruction Survey, Buffer Establishment, and Nest Deterrence

- To the extent feasible, construction activities and vegetation removal (including trees) shall be conducted during the nonbreeding season for birds (September 1 to January 31) to avoid the nesting season (February 1 to August 31). If construction activities are not initiated until after the start of the nesting season, vegetation removal shall be conducted during the nonbreeding season for birds (September 1 to January 31) to the extent feasible. This will preclude the establishment of nests in such vegetation and prevent potential delays for the Project.
- If construction activities occur within the nesting season for birds (February 1 to August 31), a qualified wildlife biologist with demonstrated nesting bird survey experience shall conduct a nesting bird preconstruction survey. Surveys shall include a search of all suitable nesting habitat (e.g., trees, shrubs, buildings) in and immediately adjacent to the impact area for nests. In addition, a 250-foot area around the Project site shall be surveyed for nesting raptors, using binoculars to view offsite areas in addition to the surrounding public right-of-way. If an active nest is found close to work areas, a qualified biologist shall establish a no-disturbance buffer around the nest to avoid disturbance or destruction until after the biologist determines that the nest is no longer active. Buffer zones are typically 250–300 feet for raptors and 50–100 feet for other bird species. The buffer size, which can vary with different species, shall be based on species’ sensitivity to disturbance and the planned work activities in the vicinity. Buffer size shall also depend on the level of noise or construction disturbance, the line of sight

between the nest and the disturbance, ambient levels of noise and other disturbances, and topographical or artificial barriers.

- If there is a lapse in construction lasting 7 days or longer at a previously surveyed building, tree, or vegetated area, an additional preconstruction survey shall be conducted.
- Any inactive non-raptor nest shall be removed by a qualified biologist to deter nesting.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less than Significant)

There are currently 457 trees on the Project site (Appendix C). According to the General Plan,⁴⁶ certain trees are subject to conditions before removal. Construction activities associated with the Project would remove 255 trees and preserve 202 trees. No heritage trees, as defined by the City's Heritage Tree List, are present; the nearest heritage tree is located at 3346 Solano Court, approximately 0.27 mile northwest of the Project site. General Plan Policy 5.10.1-P4 specifies protection for all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size and all other trees greater than 36 inches in circumference, as measured from 48 inches above grade, on private and public property or in the public right-of-way. The Project proposes to remove one cedar, seven oaks (one of which is in poor condition and less than 36 inches in circumference), and 80 redwoods (20 of which are in poor condition and four are less than 36 inches in circumference). The Project would adhere to General Plan Policy 5.3.1-P10, which requires new development to replace trees at a ratio of 2:1 (replaced/lost). Therefore, if 234 healthy trees are removed, the Project Sponsor would be required to plant at least 468 new trees on the Project site. As shown in the conceptual landscape plans, up to 327 new trees would be planted throughout the Project site, for a total of approximately 510 trees (including the 202 preserved trees). Per General Plan Policy 5.3.1-P10, the remaining 141 trees would be replaced through an in-lieu payment for tree planting offsite. With implementation of the tree replacement plan and in-lieu payment equal to the value of planting 141 trees offsite, the Project would not conflict with any local policies or ordinances protecting biological resources. The impact would be ***less than significant***.

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? (No Impact)

No adopted or proposed habitat conservation plans (HCPs) or natural community conservation plans (NCCPs) are applicable to the City. The nearest area covered by an HCP, the Santa Clara Valley HCP, is approximately 1 mile south of the Project site. Because no HCPs or NCCPs apply to the Project site, there would be ***no impact*** related to such plans.

⁴⁶ City of Santa Clara. 2014. *City of Santa Clara 2010–2035 General Plan*. Available: <https://www.santaclaraca.gov/home/showdocument?id=56139>. Accessed: January 16, 2020.

V. Cultural Resources

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

Setting

Natural Environment

The Project site, which is surrounded by primarily residential developments, is between Saratoga Creek to the east, Calabazas Creek to the west, and San Francisco Bay to the northeast. Although heavily urbanized, the area has undergone significant changes over the decades. The channelization of streams and creeks for agricultural and, later, urban use drastically changed the natural setting. Historically and prehistorically, marsh habitat was in the vicinity of the Project site, providing freshwater resources, including grasses, reeds, and waterfowl. Prehistoric settlements and use areas were located close to freshwater sources (within 500 feet). Therefore, these areas have increased potential for containing as-yet undocumented archaeological resources.

Prehistoric Setting

According to the General Plan EIR, Native American settlements are commonly found in proximity to local waterways where food and other resources were once plentiful. In the Santa Clara Valley, most sites were found in the flood basin and natural levee deposits along Saratoga Creek and the Guadalupe River. The Project site is approximately 3,000 feet east of Calabazas Creek and approximately 650 feet west of Saratoga Creek. Although the General Plan EIR posits that prehistorically sensitive areas are typically within 500 feet of a water course, it warns that the levee deposits at Saratoga Creek have not yet been investigated. Therefore, because of the unknown sensitivity, the Project site would be considered sensitive for undiscovered buried archaeological resources.

Review of Previously Recorded Cultural Resources

A review of previously recorded cultural resources and studies on file at the Northwest Information Center (NWIC) of the California Historical Resources Information System was completed on January 15, 2020.⁴⁷ The record search consulted NWIC files regarding cultural resource studies and sites within 0.25 mile of the Project site. No previously recorded archaeological sites were identified within the record search radius.

⁴⁷ California Historical Resources Information Center. 2020. *Record Search Results for Laguna Clara II Project*. On file at ICF. San Francisco, CA.

As part of the AB 52 process, the Native American Heritage Commission (NAHC) was contacted on January 10, 2020. In their January 15, 2020, response, the NAHC indicated that their sacred lands file had information relating to sacred lands in the vicinity of the project and identified seven California Native American tribal representatives to follow-up with:

- Charlene Nijmeh, chairperson – Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- Monica Arellano, vice chairperson – Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- Andrew Galvan – Ohlone Indian Tribe
- Valentin Lopez, chairperson – Amah Mutsun Tribal Band
- Katherine Perez, chairperson – North Valley Yokuts Tribe
- Ann Marie Sayers, chairperson – Indian Canyon Mutsun Band of Costanoan
- Irenne Zwierlein, chairperson – Amah Mutsun Tribal Band of Mission San Juan Bautista

Of the representatives identified above, only three ultimately responded to telephone and written outreach efforts, and none of the respondents identified known or suspected tribal cultural resources. However, two of the respondents provided comments related the risk of encountering archaeological resources. Chairperson Irenne Zwierlein, of the Amah Mutsun Tribal Band of Mission San Juan Bautista, requested that sensitivity training be given to all personnel conducting ground disturbing work. Chairperson Ann Marie Sayers, of the Indian Canyon Mutsun Band of Costanoan, requested that a Native American monitor and an archaeological monitor must be on site during all earth movement. A detailed summary of the project's AB 52 outreach efforts is provided in Section XVIII, *Tribal Cultural Resources*.

Historic Resources

The Project site is surrounded primarily by residential and commercial land uses. The residential buildings on the Project site were constructed in 1970/1971.⁴⁸ Because the buildings are less than 50 years old, evaluation for listing in the California Register of Historical Resources is not required. Furthermore, the General Plan did not identify any architecturally or historically significant structures on or immediately adjacent to the Project site.⁴⁹

Discussion

a. Cause a substantial adverse change in the significance of a historical resource, pursuant to Section 15064.5? (No Impact)

The buildings on the Project site are less than 50 years old and not listed in the National Register of Historic Places or the California Register of Historical Resources. In addition, as mentioned above, the City has not identified any architecturally or historically significant structures on or immediately adjacent to the Project site. Therefore, the Project would not cause a substantial adverse change in the significance of a historical resource, pursuant to Section 15064.5. There would be ***no impact***.

⁴⁸ Secor International Incorporated. 2000. *Phase I Environmental Site Assessment Report—Laguna Clara Apartments*. Secor PN: 007.18010.001. May.

⁴⁹ City of Santa Clara. 2014. *City of Santa Clara 2010–2035 General Plan*. Section 5.6: Historic Preservation. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: October 18, 2019.

b. Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5? (Less than Significant with Mitigation)

As a result of the record search at the NWIC, no previously recorded archaeological resources were identified on the Project site or in the vicinity. However, unrecorded pre-contact resources could be present because of the Project site's proximity to Saratoga Creek and Calabazas Creek, a prime resource collection area that was most likely used by pre-contact communities. In addition, because the SLF search identified sensitive tribal lands in the vicinity of the Project site, increased potential exists for unrecorded pre-contact resources to be present where historic, cultural, and/or sacred Native American sites were located.

The Project proposes demolition of residential buildings and construction of new buildings, with maximum depths of excavation reaching 16 feet below the ground surface. The depth of artificial fill at the Project site is unknown, which means that construction activities could disturb sediments that contain buried pre-contact and historical archaeological resources. Exposure or destruction of subsurface prehistoric resources would be considered a significant impact. Implementation of Mitigation Measure M-CUL-1 would ensure early identification of archaeological material during construction and outline protocols for further research and reporting should any resources be encountered, thereby minimizing potential impacts. Therefore, the Project's impact on archaeological resources would be ***less than significant with mitigation***.

Mitigation Measure M-CUL-1: Archaeological Sensitivity Training during Project Construction.

- The Project Sponsor shall note that there is potential for uncovering buried cultural resources, including pre-contact Native American burials, on any construction plans that require ground-disturbing activities.
- The Project Sponsor shall retain a professional archaeologist to give preconstruction briefings to personnel who supervise excavation contractors to warn them of the possibility of encountering significant pre-contact archaeological resources within the Project site. The archaeologist shall discuss the types of archaeological resources that could be exposed, the need to halt excavation in the event of a discovery, the protocol to follow regarding the protection for the discovery, and notification of the Project Sponsor and archaeological team. "Alert sheets" shall be posted in open locations at the Project site to notify personnel of the procedures and protocols to follow in the event that potentially significant pre-contact archaeological resources are discovered.
- In the event that prehistoric or historic resources are discovered, all activity within a 50-foot radius of the find shall be stopped and the Project Sponsor and other appropriate parties shall be notified. A qualified archaeologist shall examine the find and record the site (i.e., take field notes, measurements, and photographs for a Department of Parks and Recreation 523 Primary Record form). The archaeologist shall make a recommendation regarding eligibility for the California Register of Historical Resources, data recovery, curation, and other appropriate mitigation in accordance with California Public Resources Code Section 15064.5. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Project Sponsor has concurred with the recommendations.

Mitigation Measure M-CUL-2: Develop an Archaeological Monitoring Plan and Implement Archaeological and Tribal Monitoring.

- Due to the reasonable potential for archaeological resources to be present within proximity of the Project, the following approach will be followed to avoid significant impacts to archaeological resources. Prior to Project related ground disturbance, the Project Sponsor will develop an Archaeological Monitoring Plan (AMP). The AMP would describe the procedures and protocols that would be followed by archaeological staff, Native American monitors, and construction staff while archaeological monitoring is being performed and in the event of an unanticipated archaeological discovery. The AMP will be authored by a qualified archaeologist and will determine specific areas of archaeological sensitivity within proposed entry and exit pit locations. The AMP will include protocol that outlines archaeological monitoring best practices, anticipated resource types, and an Unanticipated Discovery Protocol. The Unanticipated Discovery Protocol will be implemented by the Project Sponsor and will describe steps to follow if unanticipated archaeological discoveries are made during construction activities work.
- Prior to commencement of project-related ground disturbance, the Project Sponsor will retain a qualified archaeological consultant and Native American monitors considered qualified by the Indian Canyon Mutsun Band of Costanoan. The archaeological monitor and Native American monitor will perform monitoring in accordance with the AMP described above.

c. *Disturb any human remains, including those interred outside of dedicated cemeteries? (Less than Significant with Mitigation)*

ICF did not identify any previously recorded prehistoric burial sites or cemeteries on or near the Project site during the NWIC record search conducted on January 15, 2020. Although unlikely, it is still possible that excavation may encounter human remains, including those interred outside of formal cemeteries. The disturbance of any human remains is considered a potentially significant impact. In compliance with California Health and Safety Code Section 7050.5, regarding human remains, and California Public Resources Code Section 5097.98, regarding the treatment of Native American remains, implementation of Mitigation Measure M-CUL-3 would be implemented to reduce the potentially significant impact to ***less than significant with mitigation***.

Mitigation Measure M-CUL-3: Stop Work If Human Remains Are Encountered.

In the event that human remains are discovered during construction, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner and the City shall be notified. The coroner shall make a determination as to whether the remains are of Native American origin and whether an investigation into the cause of death is required. If the remains are determined to be Native American, the coroner shall notify the NAHC immediately. Once the NAHC identifies the most likely descendants, the descendants shall make recommendations regarding proper burial. The recommendations shall be implemented in accordance with Section 15064.5(e) of the CEQA Guidelines. The Public Resources Code allows 48 hours for an agreement to be reached regarding such matters. If an agreement is not reached between the most likely descendants and other parties concerning the reburial method, the Project Sponsor will follow Public Resources Code Section 5097.98(e), which states that "...the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance."

VI. Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Although Pacific Gas & Electric (PG&E) provides electrical services to most of Northern California, the City distributes electricity to residents through its own electrical utility, Silicon Valley Power (SVP). SVP obtains energy from various sources throughout California, Nevada, Oregon, and Washington. In 2018, 25.5 percent of all energy generated for sale came from City-owned electricity generation facilities. By 2020, SVP intends to obtain approximately one-third of all its electricity from renewable sources. PG&E provides natural gas services only within city limits.

The City's 2013 Climate Action Plan (CAP) identifies numerous focus areas to help the City reduce energy waste, improve sustainability, and minimize the city's contribution to climate change. Measures in the CAP include the following:

- **2.4, Customer-installed Solar.** Incentivize and facilitate the installation of 6-megawatt customer-owned residential and nonresidential solar photovoltaic projects.
- **5.2 Alternative Construction Fuels.** Require construction projects to comply with BAAQMD BMPs, including those regarding alternative-fuel vehicles and equipment.

Discussion

- a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation? (Less than Significant)**

Construction

Project construction activities would require the use of trucks and other types of heavy equipment that operate on fossil fuels. Construction activities are expected to require approximately 4,800 truck trips between the Project site and Zanker Landfill, a distance of 10 miles, to remove demolished materials and excavated soil from the site, with additional truck trips for framing (i.e., building construction). In addition to haul trucks, Project construction would require the use of hydrocarbon-powered equipment, including concrete/industrial saws, excavators, rubber-tired dozers, tractors/loaders/backhoes, graders, scrapers, cranes, forklifts, generator sets, welders, pavers, paving equipment, rollers, and air compressors.

It is estimated that construction of the Project would generate approximately 1,182 metric tons of carbon dioxide equivalent (CO₂e), which is equivalent to 251 typical passenger vehicles being added to the road

during the construction period.⁵⁰ The emissions generated during construction of the Project would result primarily from the use of diesel-powered construction equipment (e.g., excavators). Construction emissions would cease once construction of the Project is complete; therefore, they are considered short term. Construction would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The impact would be ***less than significant***.

Operation

The Project design would incorporate numerous energy efficiency features, including rooftop solar panels that would provide approximately 85 percent of the required energy for common areas, Energy Star appliances, and LED lighting. Furthermore, the development would obtain Leadership in Energy and Environmental Design (LEED) Gold certification. In addition, because the building would connect to existing SVP electric service lines, residents would have the opportunity to enroll in Santa Clara Green Power, which would allow them to match their energy use to 100 percent renewable sources. Furthermore, Chapter 15.38 of the Santa Clara City Code adopted the 2019 California Green Building Standards Code, which ensures that city development is consistent with the efficiency and sustainability standards outlined in the code.⁵¹ Project operations therefore would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and Impacts would be ***less than significant***.

b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?
(No Impact)

Construction

As part of the City's 2013 CAP, construction vehicles would be required to be in compliance with BAAQMD BMPs, which would ensure that the construction equipment being used would be the most efficient reasonably available. Therefore, Project construction would not conflict with State or local energy efficiency plans. There would be ***no impact***.

Operation

During operation, the Project would be consistent with the California Green Building Standards Code as well as with measures outlined in the City's 2013 CAP. The Project would not conflict with or obstruct any State or local plans pertaining to energy efficiency. There would be ***no impact***.

⁵⁰ U.S. Environmental Protection Agency. 2018. *Greenhouse Gas Equivalencies Calculator*. October. Available: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>. Accessed: January 14, 2020.

⁵¹ City of Santa Clara. 2019. *Santa Clara City Code*. Chapter 15.38, Green Building Standards Code. Available: <https://www.codepublishing.com/CA/SantaClara/#!/SantaClara15/SantaClara1538.html#15.38>. Accessed January 16, 2020.

VII. Geology, Soils, and Paleontological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Seismically related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined Section 1803.5.3 of the California Building Code (2019), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Setting

The City is located in the Santa Clara Valley, a relatively flat alluvial basin bounded by the Santa Cruz Mountains to the southwest and west, the Diablo Mountain Range to the east, and San Francisco Bay to the north. The topography of the Santa Clara Valley rises from sea level at the south end of San Francisco Bay to elevations of more than 2,000 feet to the east. The average grade of the valley floor ranges from nearly horizontal to about 2 percent generally down to the northwest. Grades are steeper on the surrounding hillsides.

The Santa Clara Valley is within the Coast Ranges geomorphic province of California, an area characterized by northwest-trending ridges and valleys underlain by strongly deformed sedimentary and metamorphic rocks of the Franciscan Complex. Overlying these rocks are sediments deposited during recent geologic times. The Santa Clara Valley consists of a large structural basin containing alluvial deposits derived from the Diablo Range to the east and the Santa Cruz Mountains to the west. Alluvial deposits are interbedded with bay and lacustrine (lake) deposits in the north-central region. The valley sediments were deposited as a series of coalescing alluvial fans by streams that drain the adjacent mountains. These alluvial sediments make up the groundwater aquifers of the area. Soil types in the area include clay in the low-lying central areas, loam and gravelly loam in the upper portions of the valley, and eroded rocky clay loam in the foothills.

Most of the City occupies gently sloping valley floor topography in the north-central portion of the Santa Clara Valley. The City is situated on alluvial fan deposits of the Santa Clara Valley, consisting of gravel, sand, and finer sediments. Along the city's major streams are natural levee deposits, consisting of silt and clay over which man-made engineered levees have been constructed for flood control.

Landslides

Landslides occur when the stability of a slope changes from a stable to an unstable condition. The stability of a slope is affected by the following primary factors: inclination, material type, moisture content, orientation of layering, and vegetative cover. In general, steeper slopes are less stable than more gently inclined ones. According to the General Plan EIR, the City is located on gently sloping and nearly flat valley floor topography and is therefore not subject to the risk of landslides.⁵²

Expansive and Weak Soils

Expansive soils are characterized by their ability to undergo significant volume changes (i.e., shrink and swell) due to variation in moisture content. Expansive soils are typically very fine grained and have a high to very high percentage of clay, as determined by site-specific data. They can damage structures and buried utilities and increase maintenance requirements. According to the General Plan EIR, the City consists primarily of well-drained loamy soils formed on alluvial sediments, including loam and clay loam at the surface and in the very shallow subsurface, overlying gravelly sandy clay loam and fine sandy clay loam at depth.⁵³ In general, expansion potential is generally moderate in the southern city's alluvial fan and plain soils and high in the alluvial plain/valley floor soils of the northern city.

Weak soils can compress, collapse, or spread laterally under the weight of buildings and fill, causing settlement relative to the thickness of the weak soil. Usually the thickness of weak soil varies and differential settlement can occur. Weak soils also tend to amplify shaking during an earthquake and can be susceptible to liquefaction. Bay margin soils at the city's northernmost edge are identified as compressible (i.e., weak) by the County of Santa Clara.

Seismicity and Seismic Hazards

The San Francisco Bay Area is classified as Zone 4 for seismic activity, the most seismically active region in the United States. Significant earthquakes occurring in the Bay Area are generally associated with

⁵² City of Santa Clara. 2011. *City of Santa Clara 2010–2035 General Plan Integrated Final Environmental Impact Report*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: January 21, 2020.

⁵³ Ibid.

crustal movement along well-defined, active fault zones of the San Andreas fault system, which spans the Coast Ranges from the Pacific Ocean to the San Joaquin Valley. The San Andreas fault generated the great San Francisco earthquake of 1906 and the Loma Prieta earthquake of 1989 and passes through the Santa Cruz Mountains southwest of the city. The City is 7 miles from both the San Andreas and Calaveras faults and 5 miles from the Hayward fault. The Monta-Vista Shannon fault is approximately 6 miles west of the city.

Fault Rupture

Fault rupture occurs when fault displacement extends upward to the ground surface, creating a visible offset. Fault rupture may occur abruptly during an earthquake or slowly because of fault creep. Ground rupture due to fault movement typically results in a relatively small percentage of the total damage in an earthquake; however, displacements from surface rupture along fault traces can result in extensive damage to structures. The City does not contain any faults that were zoned under the Alquist-Priolo Earthquake Fault Zoning Act; therefore, the risk of surface fault rupture is considered low.⁵⁴

Ground Shaking

Ground shaking is the most widespread hazardous phenomenon associated with seismic activity. Ground shaking can affect developments constructed on the valley floor and hillsides. Earthquake damage resulting from ground shaking is determined by several factors: the magnitude of an earthquake, depth of focus, distance from the fault, intensity and duration of shaking, local groundwater and soil conditions, presence of hillsides, structural design, and the quality of workmanship and materials used in construction. The City is located in a region characterized by moderate to high ground shaking hazard.

Liquefaction, Lateral Spreading, and Related Ground Failure

Liquefaction occurs when saturated soils lose strength and stiffness with applied stress, such as an earthquake. The lack of cohesion causes solid soil to behave like a liquid, resulting in ground failure. Ground failure can take on many forms, including, but not limited to, flow failure, lateral spreading, lowering of the ground surface, ground settlement, loss of bearing, ground fissures, and sand boils. Liquefaction within subsurface layers, which can occur during ground-shaking associated with an earthquake, could result in ground settlement. Lateral spreading typically occurs on gentle slopes with a rapid fluid-like flow movement. It can also occur when the potential exists for liquefaction in underlying saturated soils. The majority of the City is within the Liquefaction Hazard Area identified by the County of Santa Clara pursuant to the Seismic Hazards Mapping Act⁵⁵ and therefore at risk of liquefaction, lateral spreading, and related ground failure.

⁵⁴ California Geological Survey. 2018. *Earthquake Fault Zones: A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California*. (Special Publication 42, Revised 2018.) Available: <ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf>. Accessed: July 8, 2020.

⁵⁵ County of Santa Clara. 2006. *County of Santa Clara Geologic Hazard Zones-Liquefaction Hazard Zones*.

Discussion

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

1. 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. (Less than Significant)

The Project site is not within an earthquake fault zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act (1972) or the Seismic Hazards Mapping Act (1990), and no known fault or potentially active fault exists within the Project site.⁵⁶ The nearest active fault is the San Andreas fault, approximately 9 miles west of the Project site. In a seismically active area such as the San Francisco Bay Area, the remote possibility exists for future faulting in areas where faults were not previously mapped; however, the likelihood of such fault rupture is extremely low. Furthermore, the Project would not increase the risk of fault rupture because it would not add a substantial load to any fault or introduce water, a lubricant, into a fault zone. Therefore, this impact would be *less than significant*.

2. Strong seismic ground shaking? (Less than Significant)

The Project site, and the entire South Bay region, is within a seismically active area that will most likely experience periodic minor earthquakes and a major earthquake (moment magnitude greater than 6) on one of the nearby faults. Overall, there is a 72 percent likelihood of an earthquake of magnitude 6.7 or greater occurring in the San Francisco Bay Area between 2014 and 2043.⁵⁷ The intensity of earthquake ground motion at the Project site depends on the characteristics of the generating fault, the distance to the earthquake epicenter, magnitude, and the duration of the earthquake. Ground shaking at the Project site during a major earthquake on one of the nearby faults would be very strong.⁵⁸

Because the Project site could be subject to very strong ground shaking in the event of a major earthquake, the Project could expose people or structures to substantial adverse effects related to ground shaking. However, the Project would be designed and constructed in accordance with the most current building code, which incorporates California Standards Building Code requirements adopted by the City. The building code specifies definitions for seismic sources and the procedures used to calculate seismic forces on structures during ground shaking. Therefore, because the design and construction of the Project would incorporate the necessary design and

⁵⁶ California Geological Survey. 2002. *Earthquake Zones of Required Investigation: San Jose West Quadrangle*. Available: <http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps>. Accessed: January 13, 2020.

⁵⁷ Field, E.H., G.P. Biasi, P. Bird, T.E. Dawson, K.R. Felzer, D.D. Jackson, K.M. Johnson, T.H. Jordan, C. Madden, A.J. Michael, K.R. Milner, M.T. Page, T. Parsons, P.M. Powers, B.E. Shaw, W.R. Thatcher, R.J. Weldon II, and Y. Zeng. 2015. *UCERF3: A New Earthquake Forecast for California's Complex Fault System*. (U.S. Geological Survey Fact Sheet 2015-3009). Available: <https://pubs.usgs.gov/fs/2015/3009/pdf/fs2015-3009.pdf>. Accessed: July 8, 2020.

⁵⁸ A "very strong" earthquake is defined on the Modified Mercalli Intensity Scale as an VIII, which could result in extensive damage to unreinforced masonry buildings (e.g., masonry walls falling, wood-frame houses moving off their foundations, loose partition walls being thrown out of alignment). See <http://resilience.abag.ca.gov/shaking/mmi/>.

engineering features to reduce potential damage to structures and risks for people as a result of ground shaking, the impacts would be ***less than significant***.

3. Seismically related ground failure, including liquefaction? (Less than Significant)

The Project site, along with the majority of the City, is within the Liquefaction Hazard Area identified by the County of Santa Clara pursuant to the Seismic Hazards Mapping Act.⁵⁹ The Project site is also within an area the California Geological Survey identifies as a Liquefaction Zone, an area where a historical occurrence of liquefaction or local geological, geotechnical, and groundwater conditions indicate the potential for permanent ground displacements such that mitigation, as defined in Public Resources Code Section 2693(c), would be required.⁶⁰ In addition, the geotechnical report notes that analyses of a boring sample indicated that medium-dense sand and gravel layers below the Project site could liquefy, resulting in up to 1.5 inches of liquefaction-induced settlement.⁶¹

The Project site is underlain with flood-basin and alluvial deposits, consisting of interbedded layers of clay, sand, and gravel. A Plasticity Index (PI) test was performed, and the laboratory test results indicate this clay has moderate to high expansion potential, with a PI of 19 and 28.⁶² Because the Project could experience ground failure resulting from liquefaction, if not constructed properly, the Project could expose people and structures to substantial adverse geologic effects. However, the City would require completion of a geotechnical investigation report, which would discuss and quantify the site-specific liquefaction and settlement potential and provide recommendations to address these hazards. In addition, the design and construction of the Project would incorporate necessary design and engineering features to reduce potential damage to structures and risks for people as a result of ground failure resulting from liquefaction. Therefore, this impact would be ***less than significant***.

4. Landslides? (No Impact)

According to the General Plan EIR, the City is located on gently sloping and nearly flat valley floor topography and therefore is not subject to the risk of landslides. The Project site is also not located within a mapped landslide zone.⁶³ Furthermore, the site is not within a designated earthquake-induced landslide zone, as shown on the California Geological Survey seismic hazard zone map for the area.⁶⁴ The Project site is relatively flat, with minor grade variations for drainage purposes. Therefore, the Project would have ***no impact*** with respect to landslides.

⁵⁹ County of Santa Clara. 2020. *County of Santa Clara Geologic Hazard Zones-Liquefaction Hazard Zones*. Accessed: July 8, 2020.

⁶⁰ California Geological Survey. 2002. *Earthquake Zones of Required Investigation: San Jose West Quadrangle*. Available: <http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps>. Accessed: January 13, 2020.

⁶¹ Langan Engineering and Environmental Services, Inc. 2020. *Geotechnical Investigation*. May 8.

⁶² Ibid.

⁶³ City of Santa Clara. 2011. *City of Santa Clara 2010–2035 General Plan Integrated Final Environmental Impact Report*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: January 21, 2020.

⁶⁴ California Geological Survey. 2002. *Earthquake Zones of Required Investigation: San Jose West Quadrangle*. Available: <http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps>. Accessed: January 13, 2020.

b. Result in substantial soil erosion or the loss of topsoil? (Less than Significant)

The Project site is currently developed with 24 two-story apartment buildings, two accessory buildings, and 13 carports, along with 457 trees and associated landscaping. The Project would demolish three apartment buildings and partially demolish an additional apartment building, along with two of the one-story accessory buildings and four carport structures, and construct a single three- and four-story apartment building with below-grade parking garage. The Project would require soil excavation to a maximum depth of 16 feet below the existing grade. This would result in approximately 35,500 cubic yards of cut materials and 6,000 cubic yards of mixed construction debris. All soils and debris would be off hauled to Zanker Recycling in San Jose. Ground-disturbing activities and runoff could cause soil erosion, sedimentation, and mobilization of sediment-bound pollutants, reducing water quality in channelized creeks or San Francisco Bay. However, the Santa Clara County Grading Ordinance would require the Project to adhere to a grading approval procedure, which would ensure that all ground clearing, excavation, and earthwork would not detrimentally affect people, property, or the environment.⁶⁵ In addition, all Project activities would be subject to existing regulatory requirements and implementation of a Stormwater Pollution Prevention Plan (SWPPP), as required by the Construction General Permit, further discussed in Section X, *Hydrology and Water Quality*. The SWPPP would detail construction-phase erosion and sediment control BMPs as well as housekeeping measures for the control of contaminants. With adherence to these requirements, the impact would be **less than significant**.

Once constructed, the Project would be required to comply with State and local building code requirements to address drainage issues at the site and comply with the City's stormwater management ordinance regarding post-construction stormwater runoff. For these reasons, the Project would not result in substantial erosion upon completion of construction. The impact would be **less than significant**.

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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse? (Less than Significant)

With respect to landslides, the Project site is relatively flat, and according to the General Plan EIR, it is not within a mapped landslide zone.⁶⁶ Furthermore, the site is not within a designated earthquake-induced landslide zone, as shown on the California Geological Survey seismic hazard zone map for the area.⁶⁷ Therefore, Project would not increase risks with respect to landslides.

Liquefaction occurs when saturated soils lose strength and stiffness with applied stress, such as an earthquake. The lack of cohesion causes solid soil to behave like a liquid, resulting in ground deformation. Ground deformation can take on many forms, including, but not limited to, flow failure, lateral spreading, lowering of the ground surface, ground settlement, loss of bearing, ground fissures, and sand boils. Liquefaction within subsurface layers, which can occur during ground-shaking associated with an earthquake, could result in ground settlement. Lateral spreading typically occurs on gentle slopes with a

⁶⁵ County of Santa Clara Department of Planning and Development. 2019. *Grading Approval*. Available: <https://www.sccgov.org/sites/dpd/Iwantto/Permits/Pages/GA.aspx>. Accessed: January 23, 2020.

⁶⁶ City of Santa Clara. 2011. *City of Santa Clara 2010–2035 General Plan Integrated Final Environmental Impact Report*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: January 21, 2020.

⁶⁷ California Geological Survey. 2002. *Earthquake Zones of Required Investigation: San Jose West Quadrangle*. Available: <http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps>. Accessed: January 13, 2020.

rapid fluid-like flow movement. It can also occur when the potential exists for liquefaction in underlying saturated soils.

According to the General Plan EIR, the Project site is in an area that has been designated as a Liquefaction Hazard Area pursuant to the Seismic Hazards Mapping Act.⁶⁸ As such, ground failure caused by liquefaction is a substantial concern for the Project site. In addition, the geotechnical report notes that analyses of a boring sample indicated that medium-dense sand and gravel layers below the Project site could liquefy, resulting in up to 1.5 inches of liquefaction-induced settlement.⁶⁹

The soil types most susceptible to liquefaction are loose to moderately dense, saturated, non-cohesive soils with poor drainage, such as sands and silts with interbedded or capping layers of relatively low permeability. According to the General Plan EIR, the Project site is in an area that is dominated by moderately well to somewhat excessively drained medium- to fine-textured soils in the alluvial plains and fans.⁷⁰ As discussed above, the geotechnical report for the Project site encountered flood-basin and alluvial deposits, consisting of interbedded layers of clay, sand, and gravel. A PI test was performed, and the laboratory test results indicate this clay has moderate to high expansion potential, with a PI of 19 and 28.⁷¹ Therefore, there is the potential for liquefaction and settlement at the Project site. However, the design of the Project would adhere to and comply with all applicable design standards in the California Standards Building Code, and the City would require completion of a geotechnical investigation report, which would determine and quantify the risk of liquefaction at the Project site and provide appropriation design and construction recommendations. Any impacts associated with unstable soils would be ***less than significant***.

d. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2019), creating substantial direct or indirect risks to life or property? (Less than Significant)

Expansive soils are characterized by their ability to undergo significant volume changes (i.e., shrink and swell) due to variations in moisture content. Expansive soils are typically very fine grained and have a high to very high percentage of clay. They can damage structures and buried utilities and increase maintenance requirements.

According to the General Plan EIR, the City consists primarily of well-drained loamy soils that formed on alluvial sediments, with loam and clay loam at the surface and in the very shallow subsurface overlying gravelly sandy clay loam and fine sandy clay loam at depth.⁷² In general, expansion potential is generally moderate in the southern city's alluvial fan and plain soils and high in the alluvial plain/valley floor soils of the northern city. The Project site is in the southern portion of the city, in an area dominated by moderately well to somewhat excessively drained soils on the alluvial plains and fans and therefore only moderately susceptible to expansion. In addition, according to Section 1803 of the California Standards Code, in areas that are likely to have expansive soil, the building official shall require soil tests to

⁶⁸ City of Santa Clara. 2011. *City of Santa Clara 2010–2035 General Plan Integrated Final Environmental Impact Report*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: January 21, 2020.

⁶⁹ Langan Engineering and Environmental Services, Inc. 2020. *Geotechnical Investigation*. May 8.

⁷⁰ City of Santa Clara. 2011. *City of Santa Clara 2010–2035 General Plan Integrated Final Environmental Impact Report*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: January 21, 2020.

⁷¹ Langan Engineering and Environmental Services, Inc. 2020. *Geotechnical Investigation*. May 8.

⁷² City of Santa Clara. 2011. *City of Santa Clara 2010–2035 General Plan Integrated Final Environmental Impact Report*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: January 21, 2020.

determine where such soils do exist. If present, the geotechnical report must include recommendations and special design and construction provisions for foundations on expansive soils, as necessary. Therefore, because the design of the Project would adhere to and comply with all applicable design standards in the California Building Standards Code, and the City of would require completion of a geotechnical investigation report, which would determine if expansive soils exist at the Project site, potential impacts related to expansive soils would be ***less than significant***.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater? (No Impact)

The Project would include new sanitary sewer lines around the perimeter of the building that would connect to the existing 18-inch sanitary sewer main in Homestead Road. New stormwater drains and catchment basins would be placed around the perimeter of the Project as well and discharge into the existing storm drainage system. Therefore, the Project would not use a septic or alternative water disposal system and would have ***no impact***.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than Significant with Mitigation)

Paleontological resources include fossilized remains or traces of animals, plants, and invertebrates, including their imprints, from a previous geological period. Collecting localities and the geological formations containing those localities are also considered paleontological resources; they represent a limited, nonrenewable, and impact-sensitive scientific and educational resource.

According to the General Plan EIR, the Project site is in basin deposits (Qhb) dating to the Holocene age.⁷³ Because biological remains younger than 10,000 years are usually not considered fossils, geologic units of Holocene age are generally not considered sensitive for paleontological resources. However, a discovery of the remains of a Rancholabrean Columbian mammoth (*Mammuthus columbi*) along the Guadalupe River in San Jose in a strata identified as Holocene indicates that this strata may be sensitive to paleontological resources.⁷⁴

The Project would require soil excavation to a maximum depth of 16 feet below the existing grade. This would result in approximately 35,500 cubic yards of cut materials and 6,000 cubic yards of mixed construction debris. Accordingly, excavation at the Project site has potential to disturb significant paleontological resources. Such disturbance would constitute a significant impact. However, implementation of Mitigation Measure M-GEO-1, which would require the Project Sponsor to monitor excavation, evaluate found paleontological resources, and prepare and follow a recovery plan for found resources, would reduce the likelihood of significant paleontological resources being destroyed or lost.

⁷³ Ibid.

⁷⁴ University of California Museum of Paleontology. 2005. *Mammoth Discovery in San Jose—Bones Found near Guadalupe River Levee, North of Airport – June 9, 2005*. Available: <https://ucmp.berkeley.edu/mammal/mammoth/index.html>. Accessed: January 21, 2020.

With implementation of this mitigation measure, the impact would be ***less than significant with mitigation***.

Mitigation Measure M-GEO-1: Monitor, Evaluate, and Prepare Recovery Plan for Paleontological Resources.

Before the start of any excavation, the Project Sponsor shall retain a qualified paleontologist, as defined by the Society of Vertebrate Paleontology, who is experienced in teaching non-specialists. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that are likely to be seen during construction, the proper notification procedures should fossils be encountered, and the laws and regulations protecting paleontological resources. The qualified paleontologist shall make periodic visits during earthmoving in high-sensitivity sites to verify that workers are following established procedures.

If potential paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease all earthwork or other types of ground disturbance within 25 feet of the find and notify the Project Sponsor, the qualified paleontologist, and the City. The fossil should be protected by an "exclusion zone" (i.e., an area of approximately 5 feet around the discovery that is marked with caution tape to prevent damage to the fossil). Construction work in the affected areas shall remain stopped or be diverted to allow recovery of fossil remains in a timely manner. The qualified paleontologist shall evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines if the resource is deemed significant (see Society of Vertebrate Paleontology, Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, http://vertpaleo.org/Membership/MemberEthics/SVP_Impact_Mitigation_Guidelines.aspx). The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, university or museum storage coordination for any specimen recovered, and a report of findings. If storage of a specimen is required, upon receipt of the fossil collection, a signed repository receipt form shall be obtained and provided to the City. Recommendations in the recovery plan that are determined by the City to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered. The Project Sponsor shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented, including recommendations regarding the costs necessary to prepare and identify collected fossils and any curation fees charged for university or museum storage.

VIII. Greenhouse Gas Emissions

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

Regulatory Setting

State

California has established various regulations to address GHG emissions. The most relevant of these regulations are described below.

State Legislative Reduction Targets

AB 32 (Chapter 488, Statutes of 2006), the Global Warming Solutions Act of 2006, requires the State to reduce GHG emissions to 1990 levels by 2020. Senate Bill (SB) 32 (2016) requires the State to reduce emissions to 40 percent below the 1990 level by 2030. The State's plan to reach these targets is presented in periodic scoping plans. CARB adopted the 2017 Climate Change Scoping Plan in November 2017 to meet the GHG reduction requirement set forth in SB 32⁷⁵ and proposes continuing the major programs of the previous scoping plan (e.g., programs involving cap-and-trade regulation, low-carbon fuel standards, more efficient cars and trucks, more efficient freight movement, the Renewables Portfolio Standard [RPS], methane emissions from agricultural and other wastes). The current scoping plan articulates a key role for local governments, recommending that they establish GHG reduction goals for both their municipal operations and the community consistent with those of the State.

Executive Order Reduction Targets

In 2005, Executive Order (EO) S-3-05 established goals to reduce California's GHG emissions to (1) 2000 levels by 2010 (achieved), (2) 1990 levels by 2020, and (3) a level 80 percent below the 1990 levels by 2050. In 2018, EO B-55-18 established a new State goal to achieve carbon neutrality as soon as possible (no later than 2045) and achieve and maintain net negative emissions thereafter. EOs are binding on State government agencies but are not legally binding on cities and counties or on private development.

Renewables Portfolio Standard

SBs 1078 (2002), 107 (2006), 2 (2011), and 100 (2015) govern California's RPS, under which investor-owned utilities, energy service providers, and Community Choice Aggregators must procure additional retail sales per year from eligible renewable sources. The current goals for renewable sources are

⁷⁵ California Air Resources Board. 2017a. *The 2017 Climate Change Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target*. January. Available: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed: January 31, 2020.

33 percent by 2020, 40 percent by 2024, 50 percent by 2026, 60 percent by 2030, and 100 percent by 2045.

Energy Efficiency Standards

The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (24 California Code of Regulations [CCR]). Part 11 established voluntary standards that became mandatory under the 2010 edition of the code. These involved sustainable site development, energy efficiency (in excess of California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The current energy efficiency standards were adopted in 2019 and took effect on January 1, 2020.

Vehicle Efficiency Standards

AB 1493 (2002) requires CARB to develop and implement regulations to reduce automobile and light-truck GHG emissions. Stricter emissions standards for automobiles and light trucks went into effect beginning with the 2009 model year. Additional strengthening of the Pavley standards (referred to previously as *Pavley II* and now referred to as the *Advanced Clean Cars* measure) was adopted for vehicle model years 2017 through 2025 in 2012. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon by 2025.

Low Carbon Fuel Standard

With EO S-01-07, Governor Schwarzenegger set forth the low-carbon fuel standard for California. Under this 2007 EO, the carbon intensity of California's transportation fuels would be reduced by at least 10 percent by 2020.

Regional Land Use and Transportation Planning to Reduce Vehicle Miles Traveled

SB 375, signed into law by Governor Schwarzenegger on September 30, 2008, became effective January 1, 2009. This law requires the State's 18 Metropolitan Planning Organizations to develop sustainable communities strategies (SCSs) as part of their Regional Transportation Plans (RTPs) through integrated land use and transportation planning and demonstrate an ability to attain the GHG emissions reduction targets that CARB established for the region by 2020 and 2035. This would be accomplished through either the financially constrained SCS as part of the RTP or an unconstrained alternative planning strategy. If regions develop integrated land use, housing, and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain CEQA review requirements.

CEQA Requirements to Assess Vehicle Miles Traveled

SB 743 (2013) revised the CEQA Guidelines to establish new impact analysis criteria for the assessment of a project's transportation impacts. The intent behind SB 743, and the revisions to the CEQA Guidelines, is to integrate congestion management, infill development, active transportation, and GHG emissions reductions into future assessments. The Office of Planning and Research (OPR) recommends that vehicle miles traveled (VMT) serve as the primary analysis metric, replacing the existing criteria (i.e., delay and LOS). In 2018, OPR released a technical advisory, outlining potential VMT significance thresholds for different project types.

Short-Lived Climate Pollutants Reduction Strategy

SB 605 (2014) directed CARB, in coordination with other State agencies and local air districts, to develop the comprehensive Short-Lived Climate Pollutants (SLCP) Reduction Strategy. SB 1383 directed CARB to approve and implement the SLCP Reduction Strategy to achieve the following reductions in SLCPs:

- 40 percent reduction in methane, below 2013 levels by 2030
- 40 percent reduction in hydrofluorocarbon gases, below 2013 levels by 2030
- 50 percent reduction in anthropogenic black carbon, below 2013 levels by 2030

CARB adopted the SLCP Reduction Strategy in March 2017 as a framework for achieving the methane, hydrofluorocarbon, and anthropogenic black carbon reduction targets set by SB 1383. The SLCP Reduction Strategy includes 10 measures that fit within a wide range of ongoing planning efforts throughout the State. CARB and the California Department of Resources Recycling and Recovery (CalRecycle) are currently developing regulations to achieve these goals.

Local

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the Metropolitan Planning Organization for the nine counties that make up the San Francisco Bay Area and the SFBAAB, which includes the City. As described above, SB 375 requires the Metropolitan Planning Organizations to prepare RTPs/SCSs that present integrated regional land use and transportation approaches for reducing VMT and their associated GHG emissions. CARB identified the initial goal for the SFBAAB to be reducing VMT per capita by 7 percent by 2020 and 15 percent by 2035 compared to 2005 levels. The MTC adopted a RTP/SCS in 2013 known as *Plan Bay Area*, which was updated in 2017 and named *Plan Bay Area 2040*, to meet the initial goals. In 2018, CARB updated the per capital GHG emissions reduction targets, which called for a 10 percent per capita GHG reduction by 2020 and 19 percent per capita reduction by 2035 compared to 2005 levels.⁷⁶ MTC will be addressing the revised goals in the next RTP/SCS.

Plan Bay Area 2040 and the next updated RTP/SCS are relevant to the Project because the CEQA Guidelines require an assessment of a project's consistency with plans to reduce GHG emissions.

Bay Area Air Quality Management District

As discussed in Section III, *Air Quality*, BAAQMD is responsible for air quality planning within the SFBAAB, including projects in the City. BAAQMD has adopted advisory emission thresholds to assist CEQA lead agencies in determining the level of significance of a project's GHG emissions; the thresholds are outlined in the agency's *California Environmental Quality Act: Air Quality Guidelines* (CEQA Guidelines).⁷⁷ The emission thresholds apply only to projects with build-out years prior to 2020. The CEQA Guidelines also outline methods for quantifying GHG emissions as well as potential mitigation measures.

⁷⁶ California Air Resources Board. 2018. *Regional Plan Targets*. March. Available: <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets>. Accessed: January 3, 2020.

⁷⁷ Bay Area Air Quality Management District. 2017. *California Environmental Quality Act: Air Quality Guidelines*. May. Available: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: January 3, 2020.

City of Santa Clara General Plan

The General Plan includes policies that address GHG emissions during the planning horizon (2010 to 2035) of the General Plan. Goals and policies that address sustainability are aimed at reducing the city's contribution to GHG emissions. As described below, development of a comprehensive GHG emissions reduction strategy for the City is also included in the General Plan.

City of Santa Clara Climate Action Plan

The City has a comprehensive GHG emissions reduction strategy for achieving its fair share of statewide emissions reductions within the 2020 timeframe, consistent with AB 32, the Global Warming Solutions Act. The City's CAP, adopted on December 3, 2013, specifies the strategies and measures to be taken for a number of focus areas (e.g., coal-free and large renewables, energy efficiency, water conservation, transportation and land use, waste reduction) citywide to achieve the overall emissions reduction target. The plan also includes an adaptive management process that can incorporate new technology and respond when goals are not being met.

A key reduction measure undertaken by the City under the 2013 CAP was in the coal-free and large renewables focus area. The City operates SVP, a City-owned utility that provides electricity for Santa Clara, including the Project site. Because nearly half (48 percent) of Santa Clara's GHG emissions result from electricity use, removing GHG-intensive sources of electricity generation (such as coal) is a major focus area in the City's 2013 CAP for achieving the GHG reduction goals. In January of 2018, SVP addressed this focus area when it became a coal-free utility.

SVP provides all residential customers with carbon-free power, which is the utility's standard default power supply. This means that power generation produces no net carbon emissions. Inherently, carbon-free power uses no fossil fuel. Carbon-free electricity from SVP consists of 50 percent large hydroelectric power and 50 percent eligible renewable energy sources, including solar, wind, geothermal, landfill gas, and small hydroelectric power plants.⁷⁸

CEQA clearance for all discretionary development proposals is required to address the consistency of individual projects with the reduction measures in the City's 2013 CAP and the goals and policies in the General Plan to reduce GHG emissions. Compliance with appropriate measures in the CAP would ensure an individual project's consistency with an adopted GHG reduction plan. Projects that are consistent with the CAP would have a less than significant impact related to GHG emissions generated through the 2020 planning horizon of the CAP. A project's post-2020 GHG emissions would not be considered a less than significant impact based solely on its consistency with the CAP. However, a project's consistency with the CAP framework is considered because many of the policies would most likely be carried forward by the City to address post-2020 emissions.

Setting

Global Climate Change

The process known as the *greenhouse effect* keeps the atmosphere near Earth's surface warm enough for the successful habitation of humans and other life forms. The greenhouse effect is created by sunlight that passes through the atmosphere. Some of the sunlight striking Earth is absorbed and converted to heat,

⁷⁸ Silicon Valley Power. n.d. *Carbon-Free FAQ*. Available: <https://www.siliconvalleypower.com/svp-and-community/about-svp/faqs/carbon-free-faq>. Accessed: January 3, 2020.

which warms the surface. The surface emits a portion of this heat as infrared radiation, some of which is re-emitted toward the surface by GHGs. Human activities that generate GHGs increase the amount of infrared radiation absorbed by the atmosphere, thus enhancing the greenhouse effect and amplifying the warming of Earth.

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere since the Industrial Revolution.⁷⁹ Rising atmospheric concentrations of GHGs in excess of natural levels result in increasing global surface temperatures—a process commonly referred to as *global warming*. Higher global surface temperatures, in turn, result in changes to Earth's climate system, including increased ocean temperatures and acidity, reduced areas of sea ice, variable precipitation, and increased frequencies and intensities during extreme weather events.⁸⁰ Large-scale changes to Earth's system are collectively referred to as *climate change*.

The 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 estimates that human-induced warming reached a level approximately 1°C above pre-industrial levels in 2017 and is increasing at a rate of 0.2°C per decade. Under the current nationally determined contributions of mitigation from each country until 2030, global warming is expected to increase the temperature 3°C by 2100, with warming to continue afterwards.⁸¹ Large increases in global temperatures could have substantial adverse effects on the natural and human environments worldwide.

Greenhouse Gases

The principal anthropogenic (human-made) GHGs contributing to global warming are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated compounds, including sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic sources.

The primary GHGs of concern associated with the Project are CO₂, CH₄, and N₂O. The principal characteristics of these pollutants are discussed below.

Carbon dioxide enters the atmosphere through fossil fuel (i.e., oil, natural gas, coal) combustion, solid waste decomposition, plant and animal respiration, and chemical reactions (e.g., cement manufacturing). CO₂ is also removed from the atmosphere (or *sequestered*) when it is absorbed by plants as part of the biological carbon cycle.

Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and agricultural practices as well as the decay of organic waste in municipal solid waste landfills.

⁷⁹ Intergovernmental Panel on Climate Change. 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*. Available: https://www.ipcc.ch/site/assets/uploads/2018/05/ar4_wg1_full_report-1.pdf. Accessed: January 31, 2020.

⁸⁰ Intergovernmental Panel on Climate Change. 2018. *Global Warming of 1.5°C. Contribution of Working Group I, II, and III*. Available: <https://www.ipcc.ch/sr15/>. Accessed: January 31, 2020.

⁸¹ Ibid.

Nitrous oxide is emitted during agricultural and industrial activities as well as the combustion of fossil fuels and solid waste.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most commonly accepted method for comparing GHG emissions is the global warming potential (GWP) methodology defined in IPCC reference documents. IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO₂e, which compares the gas in question to that of the same mass of CO₂ (CO₂ has a global warming potential of 1 by definition).

Table 3-11 lists the global warming potential of CO₂, CH₄, and N₂O and their lifetimes in the atmosphere.

Table 3-11. Lifetimes and Global Warming Potentials of Key Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100 years)	Lifetime (years)
CO ₂	1	50–200
CH ₄	25	9–15
N ₂ O	298	121

Source: California Air Resources Board. 2018b. *Global Warming Potentials*. Last reviewed: June 22. Available: <https://www.arb.ca.gov/cc/inventory/background/gwp.htm#transition>. Accessed: January 31, 2020.

CH₄ = methane

CO₂ = carbon dioxide

N₂O = nitrous oxide

All GWPs used for CARB's GHG inventory and assessing attainment of the State's 2020 and 2030 reduction targets are considered over a 100-year timeframe (as shown in Table 3-11). However, CARB recognizes the importance of short-lived climate pollutants and reducing these emissions to achieve the State's overall climate change goals. Short-lived climate pollutants have atmospheric lifetimes on the order of a few days to a few decades, and their relative climate forcing impacts, when measured in terms of how they heat the atmosphere, can be tens, hundreds, or even thousands of times greater than that of CO₂.⁸² Recognizing their short-term lifespan and warming impact, short-lived climate pollutants are measured in terms of CO₂e using a 20-year time period. The use of GWPs with a time horizon of 20 years captures the importance of the short-lived climate pollutants and gives a better perspective on the speed at which emission controls will affect the atmosphere relative to CO₂ emission controls. The SLCP Reduction Strategy, discussed in the *Regulatory Setting*, addresses CH₄, HFC gases, and anthropogenic black carbon. CH₄ has lifetime of 12 years and a 20-year GWP of 72. HFC gases have lifetimes of 1.4 to 52 years and a 20-year GWP of 437 to 6,350. Anthropogenic black carbon has a lifetime of a few days to weeks and a 20-year GWP of 3,200.⁸³

Greenhouse Gas Reporting

A GHG inventory is a quantification of all GHG emissions and sinks⁸⁴ within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (e.g., for global and national

⁸² California Air Resources Board. 2017b. *Short-Lived Climate Pollutant Reduction Strategy*. Available: https://www2.arb.ca.gov/sites/default/files/2018-12/final_slcp_report%20Final%202017.pdf. Accessed: January 31, 2020.

⁸³ Ibid.

⁸⁴ A GHG sink is a process, activity, or mechanism that removes a GHG from the atmosphere.

entities) or on a small scale (e.g., for a building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources. Table 3-12 outlines the most recent global, national, statewide, and local GHG inventories to help contextualize the magnitude of potential Project-related emissions.

Table 3-12. Global, National, State, and Regional Greenhouse Gas Emission Inventories

Emissions Inventory	CO₂e (metric tons)
2010 IPCC Global GHG Emissions Inventory	52,000,000,000
2017 USEPA National GHG Emissions Inventory	6,472,300,000
2017 CARB State GHG Emissions Inventory	424,100,000
2015 BAAQMD GHG Emissions Inventory	85,000,000

Sources: Intergovernmental Panel on Climate Change. 2014. *Climate Change Synthesis Report*. Available: https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf. Accessed: January 31, 2020.

U.S. Environmental Protection Agency. 2019. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990–2017*. Available: <https://www.epa.gov/sites/production/files/2019-02/documents/us-ghg-inventory-2019-main-text.pdf>. Accessed: January 31, 2020.

California Air Resources Board. 2019. *California Greenhouse Gas Emission Inventory – 2018 Edition*. Last revised: August 12, 2019. Available: <https://ww3.arb.ca.gov/cc/inventory/data/data.htm>. Accessed: January 31, 2020.

Bay Area Air Quality Management District. 2017b. *Final 2017 Clean Air Plan*. Adopted April 19. Available: http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_proposed-final-cap-vol-1-pdf.pdf. Accessed: January 31, 2020.

Discussion

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant with Mitigation)**

Construction

Construction would be expected to span approximately 24 months, beginning in 2020. Construction activities would generate emissions of CO₂, CH₄, and N₂O from mobile and stationary construction equipment as well as construction employees' vehicles and haul trucks. The emissions generated during construction of the Project were estimated using CalEEMod version 2016.3.2, as summarized in Table 3-13. As shown in Table 3-13, it is estimated that construction of the Project would generate approximately 1,182 metric tons of CO₂e. This is equivalent to adding 251 typical passenger vehicles to the road during the construction period.⁸⁵ The emissions generated during construction of the Project would result primarily from the use of diesel-powered construction equipment (e.g., excavators). Construction emissions would cease once construction of the Project is complete; therefore, they are considered short term.

⁸⁵ U.S. Environmental Protection Agency. 2018. *Greenhouse Gas Equivalencies Calculator*. October. Available: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>. Accessed: January 14, 2020.

Table 3-13. Estimated GHG Emissions from Project Construction (metric tons per year)

Year	CO ₂	CH ₄	N ₂ O	CO ₂ e
2020	425	0.1	< 0.1	426
2021	516	0.1	< 0.1	518
2022	238	< 0.1	< 0.1	238
Total	1,178	0.2	< 0.1	1,182

CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide; CO₂e = carbon dioxide equivalent, including the relative warming capacity (i.e., global warming potential) of each GHG

BAAQMD identifies sources of information on potential thresholds of significance and mitigation strategies for operational GHG emissions from land use development projects in its CEQA Guidelines. The BAAQMD CEQA Guidelines do not identify a GHG emissions threshold for construction-related emissions; however, they do recommend that GHG emissions from construction be quantified and disclosed and a determination regarding the significance of the GHG emissions be made with respect to whether the project in question is consistent with State goals regarding reductions in GHG emissions.

The Project would implement Mitigation Measure M-GHG-1 to reduce GHG emissions during construction.

Mitigation Measure M-GHG-1: Implement BAAQMD's Best Management Practices to Reduce GHG Emissions from Construction.

- Use alternative-fuel (e.g., biodiesel, electric) construction vehicles/equipment (at least 15 percent of the fleet);
- Use local building materials (at least 10 percent); and
- Recycle at least 50 percent of construction waste or demolition materials.

The Project would ensure that GHG emissions during construction would be minimized and that the impact would be ***less than significant with mitigation***. Furthermore, the Project would further reduce this less than significant impact with implementation of Mitigation Measure M-AQ-2, which would reduce GHG emissions from construction activities by requiring construction equipment to be maintained and properly tuned and idling times limited.

Operations

To assist lead agencies in determining whether operational GHG emissions require further analysis and whether a project may exceed the BAAQMD GHG mass emissions or efficiency threshold, BAAQMD developed screening criteria in its CEQA Air Quality Guidelines.⁸⁶ However, BAAQMD's screening criteria do not apply to the Project because they apply only to projects with build-out years prior to 2020. Build-out of the Project is anticipated to occur in 2022.

⁸⁶ Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines*. May. Available: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf?la=en. Accessed: January 14, 2020.

Because BAAQMD's screening criteria do not apply, GHG emissions from motor vehicles were evaluated using CalEEMod and trip generation rates from the Project's trip generation analysis.⁸⁷ Default trip lengths from CalEEMod were also used, as were area, energy, water, and waste emissions. Area sources include gasoline- and diesel-fired landscaping equipment. Energy sources include natural gas as well as electricity, both use and generation. Water consumption results in indirect GHG emissions from the conveyance and treatment of water. Waste generation results in fugitive CH₄ and N₂O emissions from the decomposition of organic matter.

Existing operational GHG emissions associated with existing residential land uses are shown in Table 3-14.

Table 3-14. Existing Operational Greenhouse Gas Emissions (metric tons per year)

Emissions Category	Estimated Total Emissions (metric tons)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Operational Activities (per year)				
Area Sources	3	< 0.1	< 0.1	3
Energy Use	23	< 0.1	< 0.1	23
Mobile Sources	262	< 0.1	< 0.1	262
Solid Waste Generation	4	0.2	< 0.1	10
Water Use	1	0.1	< 0.1	4
Total Existing Operational Emissions (per year)	293	0.3	< 0.1	302
CH ₄ = methane; CO ₂ = carbon dioxide; CO ₂ e = carbon dioxide equivalent; N ₂ O = nitrous oxide				

Total GHG emissions associated with Project operations have been estimated, as presented in Table 3-15.

Table 3-15. Project Operational Greenhouse Gas Emissions (metric tons per year)

Emissions Category	Estimated Total Emissions (metric tons)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Operational Activities (per year)				
Area Sources	12	< 0.1	< 0.1	12
Energy Use	104	< 0.1	< 0.1	104
Mobile Sources	1,044	< 0.1	< 0.1	1,045
Solid Waste Generation	21	1.2	< 0.1	52
Water Use	5	0.5	< 0.1	20
Total Project GHG Emissions (per year)	1,185	1.8	< 0.1	1,233
CH ₄ = methane; CO ₂ = carbon dioxide; CO ₂ e = carbon dioxide equivalent; N ₂ O = nitrous oxide				

As shown in Table 3-15, total Project GHG emissions would total approximately 1,233 metric tons of CO₂e per year. Net emissions associated with the Project were estimated by subtracting emissions associated with existing land use types from emissions associated with proposed land use types for build-out-year conditions. The Project's net estimated annual operational emissions are presented in Table 3-16.

⁸⁷ Hexagon Transportation Consultants, Inc. 2019. *Trip Generation Analysis for the Proposed Project Located at 3131 Homestead Road in Santa Clara, California*. July 22. Accessed: January 3, 2020.

Table 3-16. Net (Project minus Existing) Greenhouse Gas Emissions (metric tons per year)

Emissions Category	Estimated Total Emissions (metric tons)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Total Existing Operational Emissions (per year)	293	0.3	< 0.1	302
Total Project GHG Emissions (per year)	1,185	1.8	< 0.1	1,233
Net GHG Emissions (per year)	892	1.5	< 0.1	931
CH ₄ = methane; CO ₂ = carbon dioxide; CO ₂ e = carbon dioxide equivalent; N ₂ O = nitrous oxide				

As shown in Table 3-16, the Project's net GHG emissions would total approximately 931 metric tons of CO₂e per year. This analysis evaluates operational GHG impacts, based on compliance with regulatory programs, which is recognized by the Supreme Court as an acceptable pathway for evaluating project-level GHG emissions under CEQA (*Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company*). Where applicable, the analysis considers guidance issued by CARB and OPR.^{88,89} Because the Project would be in operation in 2022, the 2017 scoping plan, which outlines reduction targets through 2030, is the most relevant regulatory document for evaluating the Project.

Mobile-Source Emissions

Federal, State, and local regulatory efforts target three elements of emissions reduction: vehicle fuel efficiency, the carbon content of fuels, and VMT. Most adopted programs and regulations focus on fuel efficiency (e.g., Corporate Average Fuel Economy [CAFE] standards, Pavley standard) and the carbon intensity of transportation fuels (e.g., low-carbon fuel standard). Vehicle electrification is also rapidly becoming part of the State's approach to reducing mobile-source emissions (e.g., Title 24). The Project does not include any features that would conflict with these programs. Rather, the Project would provide approximately 10 percent (40 spaces) of the proposed new parking spaces as designated electric-vehicle parking.

A recent CARB assessment makes clear that the State "is not on track to meet greenhouse gas reductions expected under SB 375".⁹⁰ SB 743 is intended to close the VMT and emissions reduction gap. There is therefore a nexus between SB 743 and the State's goals to reduce mobile-source GHG emissions. In response to SB 743, OPR released its technical advisory on evaluating transportation impacts under CEQA in December 2018. The advisory indicates that "achieving 15 percent lower per capita (residential) or per employee (office) VMT than existing development is both generally achievable and is supported by evidence that connects this level of reduction to the State's emissions goals."⁹¹ This reduction goal is consistent with recent CARB (2019) analysis, which demonstrates that a 14.3 percent reduction in VMT

⁸⁸ California Air Resources Board. 2019. *California Air Resources Board 2017 Scoping Plan–Identified VMT Reductions and Relationship to State Climate Goals*. January. Available: https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf. Accessed: January 31, 2020.

⁸⁹ Governor's Office of Planning and Research. 2018. *Discussion Draft CEQA and Climate Change Advisory*. December. Available: http://opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Advisory.pdf. Accessed: January 31, 2020.

⁹⁰ California Air Resources Board. 2018. *Regional Plan Targets*. March. Available: <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets>. Accessed: January 3, 2020

⁹¹ Governor's Office of Planning and Research. 2018. *Discussion Draft CEQA and Climate Change Advisory*. December. Available: http://opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Advisory.pdf. Accessed: January 31, 2020.

per capita by 2050 (compared to a 2015–2018 average) would be needed statewide to meet the GHG planning goals.

As discussed in the Project's trip generation analysis,⁹² the Project would decrease per-dwelling-unit VMT and, consequently, per-service-population VMT by 25.7 percent relative to existing conditions in 2022 and meet the 15 percent per-service-population VMT reduction target. Therefore, it would not conflict with the State's long-term emissions reduction trajectory for mobile sources. In addition, implementation of the Project would optimize public transit as well as bicyclist and pedestrian access to the site by locating the Project within 3 miles of two Caltrain stations, adjacent to local bus routes, and adjacent to routes that provide safe and convenient access for bicyclists and pedestrians.

Area Emissions

As shown in Table 3-15, emissions associated with area sources would total approximately 12 metric tons of CO₂e per year in 2022. Area sources include gasoline-powered landscaping equipment (e.g., trimmers, mowers). Area source emissions are based on CalEEMod's default assumptions, which represent a conservative estimate of equipment usage, based on the square footage of new building space. The surfaces at the Project site would include residential buildings, sidewalks and streets, landscaping and open space, and pervious pavement. The Project would decrease the amount of landscaping compared to current conditions by using primarily trees, shrubs, gardens, and pervious pavement as opposed to lawns, thereby minimizing the routine use of mowers and other landscaping equipment. In addition, the Project would provide outdoor electrical outlets in accessible locations to charge or power electric lawn and garden equipment.

As described above, there are no relevant measures in the scoping plan for landscaping equipment. Although an inevitable transition away from fossil-fuel equipment will be needed to achieve carbon neutrality by 2045, the scoping plan did not assume all electric landscaping equipment in its 2030 reduction analysis. The Project's use of primarily trees and shrubs instead of lawns would reduce landscaping emissions relative to buildings that incorporate grass areas. This is consistent with the scoping plan's overall goal of reducing emissions from fossil-fuel landscaping equipment.

Energy Emissions

As shown in Table 3-15, building energy emissions would be approximately 104 metric tons of CO₂e per year, a net increase of approximately 81 metric tons of CO₂e from existing conditions. OPR's 2018 *Discussion Draft CEQA and Climate Change Advisory* recommends that a land use development project that "achieves applicable building energy efficiency standards, uses no natural gas or other fossil fuels, and includes Energy Star appliances where available, may be able to demonstrate a less than significant greenhouse gas impact associated with project operation." Although OPR recommends new buildings do not consume fossil fuels, the 2017 Climate Change Scoping Plan does not assume all electric buildings in its 2030 reduction analysis. Rather, the 2017 Climate Change Scoping Plan assumes new gas appliances will be high-efficiency units.

The Project would install Energy Star appliances and meet U.S. Green Building Council's LEED Gold v4 certification standards or equivalent. This includes a requirement of the Project to use Energy Star appliances and LED lighting. The Project would also install a solar photovoltaic system on the roofs of new buildings, generating at least 680,000 kilowatt hours per year, which would be approximately 85 percent

⁹² Hexagon Transportation Consultants, Inc. 2019. *Trip Generation Analysis for the Proposed Project Located at 3131 Homestead Road in Santa Clara, California*. July 22. Accessed: January 3, 2020.

of the Project's anticipated metered energy usage. Although the Project would allow for natural gas appliances, all units would meet high-efficiency standards, consistent with the assumptions and emissions reduction requirements of the 2017 Climate Change Scoping Plan for 2030. These efforts are consistent with the scoping plan.

Land Use Emissions

The Project would remove approximately 255 trees, which would be replaced by 327 new trees. Although there are no relevant measures in the scoping plan or explicit regulatory requirements related to tree planting, the no net loss in trees is consistent with the scoping plan's overall goal of avoiding losses in carbon sequestration.

Waste Emissions

As shown in Table 3-15, emissions associated with waste would be approximately 52 metric tons of CO₂e per year, a net increase of 42 metric tons of CO₂e from existing conditions. The Project would install trash/recyclable receptacles to meet the City's Mandatory Recycling Ordinance. In addition, green waste from the Project would be required to be diverted as part of the Project's landscaping contract. These features are consistent with the scoping plan's overall goal of reducing waste emissions and its specific strategy to avoid landfill CH₄ emissions by reducing the disposal of landfill waste and organics. In addition, these features would support and comply with AB 341's mandatory recycling requirement and support the State's recycling goal.

Water Emissions

As shown in Table 3-15, emissions associated with water use would be approximately 20 metric tons of CO₂e per year, a net increase of 16 metric tons of CO₂e from existing conditions. The Project includes several water conservation features. For example, all buildings would meet LEED Gold v4 certification or equivalent by installing water-conserving appliances and low-flow fixtures. Outdoor water conservation measures would include installing and maintaining water-efficient landscaping with low-usage plant material to minimize irrigation requirements. Water would be reused onsite to reduce the Project's overall water demand. Furthermore, the Project would comply with all applicable City and State water conservation (indoor and outdoor) measures, including Title 24, Part 6, the California Energy Code baseline standard requirements for energy efficiency, based on the 2019 Energy Efficiency Standards requirements, and the 2019 California Green Building Standards Code, commonly referred to as CALGreen. These features are consistent with the scoping plan's overall goal of reducing water emissions and serve to support ongoing regulatory programs (e.g., SB X7-7, Title 24) that aim to reduce GHG emissions associated with conveying and distributing water.

Conclusion

The Project would replace removed trees and therefore would be consistent with scoping plan's overall goal of avoiding losses in carbon sequestration. Similarly, the Project's sustainability measures represent a robust suite of strategies that are consistent with applicable policies from the 2017 Climate Change Scoping Plan and regulatory programs for the area, energy, water, waste, and land use sectors. The Project would achieve the 15 percent per-service-population VMT reduction target.⁹³ Achievement of the per-service-population VMT reduction target would ensure that the Project would be consistent with

⁹³ Low-rise multi-family housing = 7.32 trips per dwelling unit (DU), mid-rise multifamily housing = 5.44 trips per DU. $5.44/7.32 = 74.3\%$, which is a decrease of 25.7% per DU.

regulatory programs, such as SB 743, that expressly aim to reduce VMT, consistent with the State's climate change goals. Therefore, GHG impacts would be *less than significant*.

b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less than Significant)

Regarding plans adopted for the purpose of reducing GHG emissions, AB 32 and SB 32 have been adopted at the statewide level. At the local level, the CAP is the City's plan to reduce GHG emissions. The Project's consistency with these three plans is assessed to determine the significance of this impact. In addition, the Project's consistency with the 2017 Clean Air Plan, SB 375/Plan Bay Area 2040, and EO B-55-18 is also reviewed.

Assembly Bill 32 and Senate Bill 32

AB 32 codifies the State's GHG emissions reduction targets for 2020. CARB adopted the 2008 scoping plan and 2014 first update as a framework for achieving AB 32. The 2008 scoping plan and 2014 first update outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. CARB adopted the 2017 Climate Change Scoping Plan in November 2017 as a framework for achieving the 2030 GHG reduction goal described in SB 32.

Transportation-related GHG reduction strategies and policies applicable to the Project outlined in the 2008, 2014, and 2017 scoping plans include the Mobile-Source Strategy, which encourages a reduction in VMT through implementation of SB 375 and regional SCSs as well as other VMT reduction strategies. The scoping plans also discuss existing and proposed water conservation measures (e.g., implementing water reuse systems and reducing the amount of impervious surfaces on land). GHG reduction strategies related to trees and vegetation are also described in the scoping plans.

The Project includes numerous objectives and measures consistent with the aforementioned scoping plan strategies and policies to reduce operational and construction-related GHG emissions. As described in Chapter 2, *Project Description*, the Project would optimize public transit as well as bicyclist and pedestrian access to the site by locating the Project within 3 miles of two Caltrain stations, adjacent to local bus routes, and adjacent to routes that provide safe and convenient access for bicyclists and pedestrians. As also described in Chapter 2, the Project would provide a net total of 72 new trees. Landscaping and open space, which would include primarily trees, shrubs, gardens, and pervious pavement as opposed to lawns, would thereby minimize the routine use of mowers and other landscaping equipment. In addition, the Project would include a water reuse system for irrigating landscaped areas. These Project features would be consistent with the water conservation- and vegetation-related measures in the scoping plans. Accordingly, the Project would not conflict with applicable policies described in the scoping plans for AB 32 and SB 32.

Consistency with the 2017 Climate Change Scoping Plan

The consistency of the Project with the policies in the 2017 Climate Change Scoping Plan for achieving the 2030 GHG target is analyzed in Table 3-17.

Table 3-17. Consistency of Project with 2017 Scoping Plan Policies^a

Policy	Primary Objective	Proposed Plan Consistency Analysis
SB 350	Reduce GHG emissions in the electricity sector through implementation of the 50 percent RPS, doubling energy savings, and taking other actions as appropriate to achieve GHG emissions reductions and planning targets in the Integrated Resource Plan process.	<p>This policy is a State program that requires no action at the local or Project level.</p> <p>Nonetheless, development of new land uses under the Project would be consistent with the energy-saving objective of this measure. The Project would include maximizing natural cooling and using vegetation and trees to shade buildings and limit direct solar gain and glare. These design guidelines and standards would reduce energy demands. In addition, the Project would include a 680,000-kilowatt-hour solar photovoltaic system that is anticipated to supply at least 85 percent of the energy demand of the Project.</p>
Low-Carbon Fuel Standard	Transition to cleaner/less-polluting fuels that have a lower carbon footprint.	<p>These policies are a State program that requires no action at the local or Project level. Nonetheless, implementation of the Project would optimize public transit as well as bicyclist and pedestrian access to the site by locating the Project within 3 miles of two Caltrain stations, adjacent to local bus routes, and adjacent to routes that provide safe and convenient access for bicyclists and pedestrians.</p>
Mobile-Source Strategy (Cleaner Technology and Fuels [CTF] Scenario)	Reduce GHGs and other pollutants from the transportation sector through a transition to zero-emission and low-emission vehicles, cleaner transit systems, and reductions in VMT.	
SB 1383	Approve and implement the SLCP Reduction Strategy to reduce highly potent GHGs.	<p>These policies represent a State program that requires no action at the local or Project level and is not applicable to the Project.</p>
California Sustainable Freight Action Plan	Improve freight efficiency, transition to zero-emission technologies, and increase competitiveness in California’s freight system.	
Post-2020 Cap-and-Trade Program	Reduce GHGs across the largest GHG emissions sources.	
Note:		
a The scoping plan policies included in this table are those representing the State strategy for meeting the 2030 GHG target of SB 32.		

As shown, the Project would not conflict with or hinder implementation of the policies in the 2017 Climate Change Scoping Plan.

City of Santa Clara Climate Action Plan

The City's 2013 CAP, which is part of the General Plan, identifies a series of GHG emissions reduction measures for implementation by development projects, thereby allowing the City to achieve its GHG

reduction goals by 2020. The measures center around seven focus areas: coal-free and large renewables, energy efficiency, water conservation, waste reduction, off-road equipment, transportation and land use, and the urban heat-island effect. The 2013 CAP also includes measures applicable to City government, existing development, and new development projects in the city.

The consistency of the Project with the measures in the City's CAP is analyzed in Table 3-18.

Table 3-18. Consistency of the Project with CAP Recommendations

No.	CAP Measure	Applicable?	Project Implementation	Consistent?
Coal-Free and Large Renewables				
1.1	Replace the use of coal in SVP's portfolio with natural gas by 2020.	No	This measure applies to SVP's electricity portfolio and would not be applicable to the Project.	NA
1.2	Renewable energy resources	No	This measure applies to City-owned land development and would not be applicable to the Project.	NA
1.3	Utility-installed renewables	Yes	The Project would generate approximately 680,000 kilowatt hours per year of electricity through an onsite solar photovoltaic system.	Yes
Energy Efficiency Programs				
2.1	Community electricity efficiency	No	This measure applies to City-adopted electricity efficiency targets that use incentives, pilot projects, and rebate programs.	NA
2.2	Community natural gas efficiency	No	This measure applies to reductions associated with increasing natural gas efficiency in existing development.	NA
2.3	Data centers	No	This measure applies to data center construction within the city.	NA
2.4	Customer-installed solar	Yes	The Project would generate approximately 680,000 kilowatt hours per year of electricity through an onsite solar photovoltaic system.	Yes
2.5	Municipal energy efficiency	No	This measure applies to the City's energy efficiency goal.	NA
2.6	Municipal renewables	No	This measure applies to the installation of solar photovoltaic systems on City-owned facilities.	NA

No.	CAP Measure	Applicable?	Project Implementation	Consistent?
Water Conservation				
3.1	Urban Water Management Plan targets	Yes	The Project includes several water conservation features. For example, all buildings would meet LEED Gold v4 certification or equivalent by installing water-conserving appliances and low-flow fixtures. Outdoor water conservation measures include installing and maintaining water-efficient landscaping with low-usage plant material to minimize irrigation requirements. Water would be reused onsite to reduce the Project's overall water demand. Furthermore, the Project would comply with all applicable City and State water conservation (indoor and outdoor) measures, including Title 24, Part 6, the California Energy Code baseline standard requirements for energy efficiency, based on the 2019 Energy Efficiency Standards requirements, and the 2019 California Green Building Standards Code, commonly referred to as CALGreen.	Yes
Waste Reduction				
4.1	Food waste collection	No	This measure applies to restaurants within the city.	NA
4.2	Increased waste diversion	Yes	The Project would install trash/recyclable receptacles to meet the City's Mandatory Recycling Ordinance. In addition, green waste from the Project would be diverted as part of the Project's landscaping contract.	Yes
Off-Road Equipment				
5.1	Lawn and garden equipment	Yes	The Project would provide outdoor electrical outlets in accessible locations to charge or power electric lawn and garden equipment. The Project would also use onsite grid power and would not include a diesel generator.	Yes
5.2	Alternative construction fuels	Yes	The Project would comply with Mitigation Measure M-AQ-2, which includes limiting construction equipment idling time, limiting vehicle speeds to 15 miles per hour or less, and ensuring proper equipment maintenance and tuning. The Project would also comply with the BAAQMD BMPs described under Impact GHG-a, above.	NA

No.	CAP Measure	Applicable?	Project Implementation	Consistent?
Transportation and Land Use				
6.1	Transportation Demand Management program	No	This measure applies to new development projects within the city's transportation districts; the Project is not located in a transportation district.	NA
6.2	Municipal Transportation Demand Management	No	This measure applies to the City's municipal Transportation Demand Management program.	NA
6.3	Electric-vehicle parking	Yes	The Project would provide approximately 40 electric-vehicle parking spaces, which would constitute approximately 10 percent of the new parking spaces associated with the Project.	NA
Urban Heat-Island Effect				
7.1	Urban forestry	Yes	The Project would provide 72 net new trees on the Project site.	Yes
7.2	Urban cooling	No	This measure applies to new nonresidential parking lots within the city.	NA
Note: N/A = not applicable				

As shown in Table 3-18, the Project would be consistent with all applicable measures in the City's CAP. Thirteen of the measures are not applicable to the Project; therefore, consistency with these measures does not apply. The Project would be consistent with all relevant measures. Because the Project would be consistent with all applicable CAP measures, it would not conflict with the City's CAP.

Bay Area 2017 Clean Air Plan

The 2017 Clean Air Plan includes performance objectives, consistent with the State's climate protection goals under AB 32 and SB 375, to reduce GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2035. The 2017 Clean Air Plan identifies a range of transportation control measures, land use and local impact measures, and energy and climate measures, which make up the Clean Air Plan's control strategy for emissions, including GHGs.

As described above, the Project would include numerous objectives and measures to reduce construction and operational GHG emissions. The Project would be consistent with the following Clean Air Plan measures: Transportation Control Measure TR22 – Construction, Freight, and Farming Equipment; Water Control Measure WR2 – Support Water Conservation; Buildings Control Measure BL1 – Green Buildings; and Natural and Working Lands Control Measure NW2 – Urban Tree Planting.

Plan Bay Area 2040/California Senate Bill 375

Under the requirements of SB 375, the MTC and Association of Bay Area Governments (ABAG) developed an SCS, along with the adopted Plan Bay Area 2040, to achieve the Bay Area's regional GHG reduction target. Targets for the San Francisco Bay Area, approved in March 2018 by CARB, include a 10 percent

reduction in GHG per capita from passenger vehicles by 2020 compared with emissions in 2005. The adopted target for 2035 is a 19 percent reduction in GHG per capita from passenger vehicles compared with emissions in 2005. The emission reduction targets are associated with land use and transportation strategies only.

It is estimated that the Project would generate up to 917 net daily trips.⁹⁴ As described under *Mobile-Source Emissions*, the Project would meet the SB 743 VMT per-service-population reduction target of 15 percent below existing levels. In addition, as described in Chapter 2, the Project would optimize public transit as well as bicyclist and pedestrian access to the site by locating the Project within 3 miles of two Caltrain stations, adjacent to local bus routes, and adjacent to routes that provide safe and convenient access for bicyclists and pedestrians. In addition, the Project would have relatively few new employees (four new employees) and would not contribute to a substantial increase in passenger vehicle travel within the region. These policies would support alternative transportation within the community, which could help reduce VMT and per capita GHG emissions from passenger vehicles, consistent with Plan Bay Area 2040.

Executive Order B-55-18

Achieving EO B-55-18 will require even more aggressive changes in all sectors of the economy and participation of all levels of government to reduce GHG emissions. Although many GHG reduction measures outlined in the 2017 scoping plan will continue to be implemented and enhanced beyond 2030, no plan for meeting the carbon neutrality goal described in EO B-55-18 has yet been adopted. In addition, EOs are binding only on State agencies and do not expressly apply to private residential developments, such as the Project.

The Association of Environmental Professionals (AEP) Climate Change Committee recommended in a 2016 white paper that CEQA analyses for projects with post-2020 development, such as the Project, not only consider “consistency with the 2020/AB 32-based framework, but also analyze the consequences of post-2020 GHG emissions in terms of their impacts on the reduction trajectory from 2020 toward 2050.” AEP further recommends that the “significance determination...should be based on consistency with ‘substantial progress’ along a post-2020 trajectory.” The 2016 AEP white paper is advisory only and not binding guidance or an adopted set of CEQA thresholds. However, the CEQA Guidelines do authorize a lead agency to consider thresholds of significance recommended by experts, such as members of the AEP Climate Change Committee, which consists of leaders from climate action planning practices as well as the consulting firms and agencies that have lead many of the local GHG reduction planning efforts across California.

As mentioned above, the Project includes numerous objectives and measures to reduce operational and construction-related GHG emissions. For example, all buildings would meet LEED Gold v4 certification or equivalent by installing water-conserving appliances and low-flow fixtures. Outdoor water conservation measures include installing and maintaining water-efficient landscaping with low-usage plant material to minimize irrigation requirements. Water would be reused onsite to reduce the Project’s overall water demand. In addition, the Project would generate approximately 680,000 kilowatt hours per year of electricity through an onsite solar photovoltaic system and meet the SB 743 per-service-population VMT reduction target of 15 percent below existing levels. Furthermore, the Project would comply with all applicable City and State measures, including Title 24, Part 6, the California Energy Code baseline standard

⁹⁴ Hexagon Transportation Consultants, Inc. 2019. *Trip Generation Analysis for the Proposed Project Located at 3131 Homestead Road in Santa Clara, California*. July 22. Accessed: January 3, 2020.

requirements for energy efficiency, based on the 2019 Energy Efficiency Standards requirements, and the 2019 California Green Building Standards Code, commonly referred to as CALGreen. It is also possible that future adopted State and federal actions would further reduce the Project's net emissions from those shown in Table 3-16. Accordingly, it is assumed that the Project's emission levels would be consistent with the goals in EO B-55-18.

Conclusion

The Project includes numerous objectives and measures that are consistent with applicable policies described in the scoping plans for AB 32, SB 32, the City CAP, Bay Area 2017 CAP, and Plan Bay Area 2040. Consequently, the Project would not conflict with achievement of the AB 32 reduction goal for 2020, SB 32 reduction goals for 2030, and the RTP/SCS reduction goals for 2020 and 2035. The Project would therefore be consistent with the State's GHG emission reduction trajectory. This impact would be ***less than significant***.

IX. Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport and result in a safety hazard or excessive noise for people residing or working in the Project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

This section describes the Project setting for hazards and hazardous materials. Except where otherwise indicated, the information is based on the Phase I Environmental Site Assessment prepared for the Project.⁹⁵

No hazardous material or hazardous waste violations have been identified at the Project site. Although several have been identified near the site, all are crossgradient with respect to the direction of groundwater flow. These do not represent recognized environmental conditions.⁹⁶ In addition, 11 leaking

⁹⁵ SECOR International Incorporated. 2000. *Phase I Environmental Site Assessment Report*. Laguna Clara Apartments, 3131 Homestead Road, Santa Clara, California. May 30. (SECOR PN: 007.18.010.001.)

⁹⁶ A recognized environmental condition is defined by the American Society for Testing and Materials (ASTM) as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to a release to the environment, (2) under conditions indicative of a release to the environment, or (3) under conditions that pose a material threat of a future release to the environment; *de minimis* conditions are not recognized environmental conditions."

underground storage tanks were identified, all between 0.3 and 0.5 mile from the Project site. None of these are immediately upgradient from the Project site with respect to the direction of groundwater flow.

Vinyl, joint compound, and other building materials, especially those manufactured before 1973, have the potential to contain asbestos. Because of the age of existing construction at the Project site (1971), asbestos may occur. Survey results for asbestos-containing materials at the Project site show that asbestos occurs at the Project site in drywall joint compound and mastic/glue for sheet vinyl flooring. In addition to these confirmed cases, it is possible that vinyl flooring materials throughout the existing apartment units could contain asbestos.

Similarly, paints manufactured before 1978, when the federal government banned the manufacture of lead-based paint, may contain lead. The Department of Housing and Urban Development (HUD) and the California Department of Health Services (California DHS) have defined lead-based paint as any paint that is more than 0.5 percent lead by weight. The California Division of Occupational Safety and Health (Cal/OSHA) states that work that involves the disturbance of materials that are more than 0.06 percent lead by weight must be conducted in accordance with the Construction Lead Standard (CCR Title 8, Section 1532.1). Because of the age of existing construction at the Project site (1971), lead-based paint may be present. Survey results for lead in paint at the Project site show that the sampled paint was 0.12 percent lead by weight. This is below the California DHS threshold of 0.5 percent but above the Cal/OSHA threshold of 0.06 percent. In addition, according to California DHS, lead-contaminated soil is soil that is more than 400 parts per million (ppm), or 0.04 percent, lead in children's play areas and 1,000 ppm, or 0.1 percent, lead in other areas. Survey results for soil at the Project site show that the samples contained lead, ranging from not detectable to 0.01 percent lead.

Electrical transformers, hydraulic equipment capacitors, and similar equipment may contain polychlorinated biphenyls (PCBs) in hydraulic fluids or dielectric insulating fluids within the equipment. The federal Toxic Substances Control Act generally prohibited the domestic manufacture of PCBs after 1979. Because of the age of construction at the Project site (1971), the potential exists for dielectric fluid in such equipment to contain PCBs. However, the transformers onsite appeared to be in good condition, with no evidence of leakage. In addition, no transformers that would be likely to contain PCBs were observed within the buildings. Several pad-mounted transformers were observed in the landscaping throughout the property. However, these are owned by SVP, which has responsibility for cleanup in case of leakage.

GeoTracker is the State Water Resources Control Board's data management system for sites that affect, or have the potential to affect, water quality in California, with emphasis placed on groundwater. GeoTracker contains records for sites that require cleanup, such as leaking underground storage tank (LUST) sites, Department of Defense sites, and cleanup program sites. GeoTracker also contains records of various unregulated projects as well as permitted facilities (e.g., irrigated lands, oil and gas production sites, operating permitted underground storage tanks, land disposal sites). A database query regarding permitted facilities that handle hazardous materials and hazardous material cleanup sites yielded no results for the Project site or within 1,000 feet.⁹⁷

EnviroStor is the Department of Toxic Substances Control's data management system for tracking cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further. A database query

⁹⁷ State Water Resources Control Board. 2020. *GeoTracker Results for Project Site Enquiry*. Available: <https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=3131+homestead%2C+santa+clara+ca>. Accessed: January 15, 2020.

regarding permitted facilities that handle hazardous materials and hazardous material cleanup sites yielded no results for the Project site or within 1,000 feet.⁹⁸ The following assumptions were made for the environmental analysis:

- Depth to groundwater at the Project site is estimated at 15 feet below the ground surface.
- The nearest schools to the Project site are Monticello Academy, the Stratford Schools, and Neighborhood Christian Center. All of these facilities lie within 0.25 mile of the Project site.
- The Project is approximately 3 miles from Norman J. Mineta San Jose International Airport.
- The Project site is not within a Very High Fire Hazard Severity Zone in either the State Responsibility Area or the Local Responsibility Area.^{99,100}

Discussion

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less than Significant)

Many federal, State, and local regulations regarding the transport, use, or disposal of hazardous materials would apply to the Project. The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established an USEPA-administered program to regulate the generation, transport, treatment, storage, and disposal of hazardous waste. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the “cradle to grave” system of regulating hazardous waste.

U.S. Department of Transportation (DOT) Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling, and transportation. Parts 107 (Hazard Materials Program), 130 (Oil Spill Prevention and Response), 172 (Emergency Response), and 177 (Highway Transportation) would all apply to the Project and/or surrounding uses.

The California Department of Toxic Substances Control (DTSC), a department of the California Environmental Protection Agency (CalEPA), is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. Division 20, Chapter 6.5, of the California Health and Safety Code deals with hazardous waste control through regulations pertaining to the transport, treatment, recycling, disposal, enforcement, and permitting of hazardous waste. Division 20, Chapter 6.10, contains regulations applicable to the cleanup of hazardous materials releases. Title 22, Division 4.5, contains the environmental health standards for the management of hazardous waste. This includes standards for identification of hazardous waste (Chapter 11) and standards applicable to transporters of hazardous waste (Chapter 13).

⁹⁸ Department of Toxic Substances Control. 2020. *EnviroStor Results for Project Site Enquiry*. Available: <https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=3131+Homestead%2C+Santa+Clara+CA>. Accessed: January 15, 2020.

⁹⁹ California Department of Forestry and Fire Protection. 2007. *Fire Hazard Severity Zones in SRA: Santa Clara County*. November 7. Available: https://osfm.fire.ca.gov/media/6766/fhszs_map43.pdf. Accessed: January 14, 2020.

¹⁰⁰ California Department of Forestry and Fire Protection. 2008. *Very High Fire Severity Zones in LRA: Santa Clara County*. October 8. Available: https://osfm.fire.ca.gov/media/6764/fhszl_map43.pdf. Accessed: January 14, 2020.

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (California Health and Safety Code, Chapter 6.11, Sections 25404–25404.9) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the environmental and emergency response programs and provides authority to the Certified Unified Program Agency (CUPA). The CUPA is designed to protect public health and the environment from accidental releases and improper handling, storage, transportation, and disposal of hazardous materials and wastes. This is accomplished through inspections, emergency response, enforcement, and site mitigation oversight. The CUPA for Santa Clara is the Santa Clara Fire Department, Hazardous Materials Division.¹⁰¹

Cal/OSHA and the federal Occupational Safety and Health Administration (OSHA) enforce occupational safety standards to minimize worker safety risks from both physical and chemical hazards in the workplace. Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices, all of which would be applicable to construction of the Project. The standards included in Cal/OSHA's Title 8 include regulations pertain to hazard control (including administrative and engineering controls), hazardous chemical labeling and training requirements, hazardous exposure prevention, hazardous material management, and hazardous waste operations.

The California Labor Code is a collection of regulations that include regulation of the workplace to ensure appropriate training on the use and handling of hazardous materials and the operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5, ensures that employees who handle hazardous materials are appropriately trained. Division 5, Part 7, ensures that employees who work with volatile flammable liquids are outfitted with appropriate safety gear and clothing.

Dischargers whose projects disturb 1 or more acres of soil, such as the Project, are required to obtain coverage under the Construction General Permit (Order 2009-0009-DWQ). Construction activities subject to this permit include clearing, grading, and ground disturbances such as stockpiling or excavation. The Construction General Permit requires completion and implementation of a site-specific SWPPP.

As stated above under *Setting*, the depth to groundwater is estimated to be 15 feet. The depth of Project excavation is estimated to be 16 feet; therefore, it is possible that groundwater would be encountered during construction. The State Water Resources Control Board's NPDES permit requires discharges of groundwater obtained during dewatering to not cause, have reasonable potential to cause, or contribute to an in-stream incursion that would exceed applicable State or federal water quality objectives/criteria or cause acute or chronic toxicity in the receiving water.

Project construction would involve the routine transport, use, and disposal of hazardous materials such as fuel, solvents, paints, oils, grease, and caulking. During Project operation, hazardous materials such as paint and solvents, which are typically found in residential complexes, would be stored and used onsite. Such transport, use, and disposal must comply with the applicable regulations discussed above, such as the RCRA, DOT Hazardous Materials Regulations, and the local CUPA regulations. Although these materials would be transported, used, and disposed of during construction and operation, these materials are typically used in construction projects and would not represent the transport, use, and disposal of acutely hazardous materials. The impact would be ***less than significant***.

¹⁰¹ Santa Clara Fire Department. n.d. *Code and Regulations*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/fire-department/divisions/fire-prevention-hazardous-materials-division/code-regulations>. Accessed: January 15, 2020.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less than Significant with Mitigation)

As mentioned above under topic “a,” hazardous materials, including fuel, solvents, paints, oils, grease, etc., would be transported, stored, used, and disposed onsite during both Project construction and operation. It is possible that any of these substances could be released to the environment during transport, storage, use, or disposal. However, compliance with federal, State, and local regulations, in combination with temporary construction BMPs (as part of the Construction General Permit requirements) would ensure that all hazardous materials would be used, stored, and disposed of properly, which would minimize potential impacts related to a hazardous materials release during the construction phase of the Project.

As discussed under *Setting*, the Phase I Environmental Site Assessment and information obtained from GeoTracker and EnviroStor indicate that no hazardous materials emissions have been identified upgradient of the Project site or at the Project site. However, the Phase I Environmental Site Assessment indicated that both asbestos-containing materials and lead are very likely present in structures that would be demolished as part of the Project because they have been found onsite in structures. Demolition could release these hazardous materials into the environment where they could cause damage and increase health risks.

The federal Toxic Substances Control Act (TSCA) of 1976 provides USEPA with the authority to require reporting, record-keeping, testing requirements, and restrictions related to chemical substances and/or mixtures. The TSCA addresses issues regarding the production, importation, use, and disposal of specific chemicals, including PCBs, asbestos, radon, and lead-based paint.

The DTSC considers asbestos hazardous, and removal is required. Asbestos-containing materials must be removed in accordance with local and State regulations as well as local air district, Cal/OSHA, and California DHS requirements. This includes materials that could be disturbed by demolition and construction activities. Therefore, the impact is significant. Adherence to these regulations and implementation of Mitigation Measures HAZ-1 and HAZ-2 would reduce the impact to ***less than significant with mitigation*** by treating suspect asbestos-containing materials as if they contain asbestos, including testing for the presence of asbestos, and managing materials suspected of containing lead-based paint in accordance with the Lead-based Paint Operations and Management Program for the property.

Mitigation Measure M-HAZ-1: Treat All Non-Tested Suspect Asbestos-Containing Materials as Asbestos Containing Materials.

During Project demolition, the contractor will treat all non-sampled suspect asbestos-containing materials as asbestos-containing materials, unless laboratory analysis indicates that they do not contain asbestos. Asbestos-containing materials may include drywall, joint compound, popcorn ceiling material, roofing material, roofing mastic, roofing penetration, boiler preformed block material, and a fire door. The contractor will manage all asbestos-containing materials in accordance with the existing Asbestos Operations and Maintenance Plan in place for the property.

Mitigation Measure M-HAZ-2: Manage Non-Tested Suspect Lead-Containing Materials.

During Project demolition, the handling of all materials that could contain lead will be performed by licensed lead abatement professionals. The contractor will manage painted surfaces in place under the existing Lead-based Paint Operations and Management Program prepared for the property.

c. *Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school? (Less than Significant with Mitigation)*

As stated above under *Setting*, the Project site lies within 0.25 mile of three schools, Monticello Academy, the Stratford Schools, and the Neighborhood Christian Center. As discussed under topic “a,” above, routine transport, use, storage, and disposal of hazardous materials such as fuel, solvents, paints, oils, grease, and caulking would occur during both construction and operation of the Project. Such transport, use, and disposal would comply with applicable regulations, such as the RCRA, DOT Hazardous Materials Regulations, and the local CUPA regulations. Although small amounts of hazardous materials would be transported, used, and disposed of during the construction phase, these materials are typically used in construction projects and would not represent the transport, use, and disposal of acutely hazardous materials.

As discussed under topic ‘b,’ above, asbestos-containing materials and lead-based paint both occur at the Project site. Demolition could release these contaminants to an area within 0.25 mile of three schools. Therefore, this impact is significant. Implementation of Mitigation Measures HAZ-1 and HAZ-2 would reduce the impact to ***less than significant with mitigation*** by treating suspect asbestos-containing materials as if they contain asbestos, including testing for presence of asbestos, and managing materials suspected of containing lead-based paint in accordance with the existing Lead-based Paint Operations and Management Program for the property.

d. *Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment? (No Impact)*

United States Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, DHS lists of contaminated drinking water wells, sites listed by the State Water Resources Control Board (SWRCB) as having underground storage tank leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

The Project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to United States Code Section 65962.5 and therefore would not create a significant hazard to the public or the environment. There would be ***no impact***.

e. *Be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport and result in a safety hazard or excessive noise for people residing or working in the Project area? (No Impact)*

The Project is approximately 3 miles from Norman J. Mineta San Jose International Airport. It does not lie within an airport safety zone and would not result in a safety hazard, nor would it result in excessive noise for people residing or working in the Project area. There would be ***no impact***.

f. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less than Significant)*

In June 2016, the Santa Clara City Council adopted a new comprehensive emergency response plan to replace the prior plan adopted in 2008. The Emergency Operations Plan (EOP) establishes responsibilities and procedures for addressing potential emergencies related to disasters such as earthquakes, floods, and dam failures; technological incidents; hazardous materials spills or releases; and incidents of domestic

terrorism involving weapons of mass destruction, such as chemical, biological, radiological, nuclear, and explosive devices. The EOP does not identify specific emergency shelters or evacuation routes in the City, though schools are identified as preferred facilities for lodging large numbers of people, with churches, hotels, and motels also likely to function as mass care facilities during large-scale disasters.

The Project would not interfere with operation of any emergency shelters and would not close off or otherwise alter any existing streets; therefore, the Project would not create any obstructions to potential evacuation routes that might be used in the event of an emergency. Emergency access to the Project site would be from the four driveways along Homestead Road and Quince Avenue. In addition, there would be one 26-foot-wide road along the eastern perimeter that would be accessible from Homestead Road and a 25-foot-wide road along the western perimeter that would be accessible from Quince Avenue for further fire access and general circulation; both of these are part of the existing site. The Project would not change emergency access to the site, nor would it interfere with an emergency response plan or evacuation plan. The impact would be *less than significant*.

g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? (No Impact)

As stated above under *Setting*, the Project site, which is in an urbanized setting, does not lie in a Very High Fire Hazard Severity Zone (FHSZ) of either the State Responsibility Area (SRA) or the Local Responsibility Area (LRA), and the City itself does not support any Moderate, High, or Very High FHSZs in LRAs or SRAs. Although, the Project would result in 183 net new residences at the Project site, these units would not be located in an area susceptible to wildfire risks or associated hazards. Therefore, it is unlikely that wildfire would occur at the Project site and expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death. There would be *no impact*.

X. Hydrology and Water Quality

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

Setting

The Project site is in the southwestern portion of the City in the Santa Clara Valley. The Project site is also within the Santa Clara sub-watershed and the larger San Francisco Bay Hydrologic Region. The Santa Clara sub-watershed encompasses 709 square miles and ultimately drains northward into San Francisco Bay.¹⁰² The primary surface water features in the City include the Guadalupe River, San Tomas Aquino Creek, Saratoga Creek, and Calabazas Creek. Their headwaters are in the Santa Cruz Mountains. To reduce flood hazards, surface waters have been channelized and substantially modified. Saratoga Creek is 0.13 mile (675 feet) southeast of the Project site; Calabazas Creek is less than 1 mile west of the Project site. Both creeks flow northward and into San Francisco Bay. Saratoga Creek is 303(d) listed as impaired for diazinon and trash. Calabazas Creek is 303(d) listed as impaired for diazinon. A total maximum daily load

¹⁰² Santa Clara Valley Urban Runoff Pollution Prevention Program. 2019. *Santa Clara Basin Stormwater Resource Plan*. August. Available: https://scvurppp.org/wp-content/uploads/2019/08/SCB_SWRP_FINAL_8-20-19.pdf. Accessed: July 8, 2020.

for diazinon was approved in May 2007. The trash listing will be addressed by implementing the trash control provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.¹⁰³

The topography of the Project site is flat and at-grade with the surrounding roadways, at an elevation of approximately 115 to 120 feet above mean sea level. The existing impervious surface area covers approximately 342,700 sf. Generally, stormwater from the Project site drains to storm basins in the parking areas and then to storm drains under Homestead Road. Water in the concrete-lined lagoons throughout the property is pumped through fountains and recycled.¹⁰⁴ Stormwater is collected and channeled in the City's storm drain system, which consists of curb inlets and a series of underground pipes. Stormwater is conveyed through these underground pipes to the channelized creeks and directed into San Francisco Bay.

The Project site is in the Santa Clara Valley Groundwater Basin, within the Santa Clara Subbasin. The site-specific depth to groundwater is unknown; however, groundwater is very likely within 15 feet of the ground surface.¹⁰⁵ Groundwater is anticipated to flow north toward San Francisco Bay, based on the local topography and proximity.

The Project site is in Federal Emergency Management Agency (FEMA) Zone X (shaded) but outside of a FEMA Special Flood Hazard Area (SFHA). FEMA Zone X (shaded) is an area of moderate flood hazard, generally the area between the 100-year and 500-year floods.¹⁰⁶ According to the General Plan EIR, the Project site is also outside the inundation areas for Anderson Dam and Lexington Dam.¹⁰⁷

The primary water quality regulations include the federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act). USEPA is the overarching authority for protecting the quality of waters of the United States. However, the SWRCB administers some CWA sections. USEPA's regulations include the NPDES permit program, which controls sources that discharge pollutants into the waters of the United States. These regulations are implemented at the regional level by the water quality control boards. The Porter-Cologne Act authorizes the SWRCB to draft State policies regarding water quality and be responsible for protecting the quality of the State's surface and groundwater supplies. The Project site is within the San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) jurisdiction.

The SWRCB implemented the NPDES Construction General Permit to regulate stormwater discharges related to construction activities. Projects disturbing 1 or more acres of soil are required to obtain coverage under the Construction General Permit. The Construction General Permit requires development and implementation of a SWPPP, which must list the BMPs that a project will use to reduce or eliminate pollutants associated with construction activities in stormwater runoff and document the placement and maintenance of those BMPs.

¹⁰³ State Water Resources Control Board. 2018. *Final 2014/2016 California Integrated Report* (Clean Water Act Section 303(d) List/305(b) Report). Available: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml. Accessed: January 15, 2020.

¹⁰⁴ Secor. 2000. *Phase I Environmental Site Assessment Report, Laguna Clara Apartments*. May 30.

¹⁰⁵ Ibid.

¹⁰⁶ Federal Emergency Management Agency. 2009. *Flood Insurance Rate Map #06085C0228H*. May 18.

¹⁰⁷ City of Santa Clara. 2011. *City of Santa Clara 2010–2035 General Plan Integrated Final Environmental Impact Report*. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan>. Accessed: January 28, 2020.

The SFBRWQCB issued a Municipal Regional Stormwater NPDES Permit to agencies in the Bay Area region, including the City (Order No. R2-2015-0049, as amended by Order No. R2-2019-0004, Permit Number CAS612008). The Project would comply with Provision C.3 of the Municipal Regional Stormwater NPDES Permit, which requires cities to implement stormwater treatment controls in new development projects to reduce pollutants in stormwater runoff and capture and treat runoff. Under Provision C.3, projects that create or replace more than 10,000 sf of impervious surface are required to design and construct onsite stormwater treatment controls to treat post-construction stormwater runoff and manage post-construction runoff with low-impact development (LID) features. Amendments to the Municipal Regional Stormwater NPDES Permit require all post-construction runoff to be treated by using LID treatment controls.

Discussion

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? (Less than Significant)

Construction activities associated with the Project include ground-disturbing activities such as demolition, excavation, grading, and vegetation removal. Ground-disturbing activities and runoff could cause soil erosion, sedimentation, and mobilization of sediment-bound pollutants, reducing water quality in channelized creeks or San Francisco Bay. In addition, hazardous materials (e.g., gasoline, oils, grease, lubricants) from construction equipment could be accidentally released during construction. An accidental discharge of hazardous materials to surface waters during construction could increase the pollutant load in runoff transported to receiving waters, temporarily adversely affecting water quality or resulting in a violation of water quality standards. However, all Project activities would be subject to existing regulatory requirements and implementation of the SWPPP, as required by the Construction General Permit, which would reduce the impacts. The SWPPP would detail construction-phase erosion and sediment control BMPs as well as housekeeping measures for the control of contaminants.

The maximum excavation depth would be 16 feet below the existing grade. The depth to groundwater is anticipated to be within 15 feet of the ground surface. In the event that groundwater is encountered during construction, dewatering would be conducted on a one-time or temporary basis during the construction phase. CWA Section 402 includes waste discharge requirements for dewatering activities. Although small levels of construction-related dewatering are covered under the Construction General Permit, if such dewatering would direct water to storm drains that lead to San Francisco Bay, compliance with the SFBRWQCB's dewatering requirements would also be required.

During Project operation, the Project would be required to meet all applicable water quality objectives for surface waters and groundwater contained in the Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin, would act in accordance with related regulatory agencies' guidelines, and meet the goals and objectives of the City's General Plan. Furthermore, the discharge of pollutants from urban runoff would be minimized with implementation of practices required by the Municipal Regional Stormwater NPDES Permit and other CEQA, federal, and State requirements. Therefore, construction and operation would not violate water quality standards or waste discharge requirements. Impacts on water quality would be ***less than significant***.

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin? (Less than Significant)

The Project would increase the amount of impervious surface area on the Project site. However, the Project would include open space and landscape areas, allowing for groundwater recharge. Open space and landscape areas would slow water, allowing groundwater to percolate into the ground, thereby providing increased benefits for groundwater recharge. Therefore, the Project would not substantially interfere with groundwater recharge because it would not decrease the size of groundwater recharge areas. Recharge in the area would be similar, or slightly improved, compared to existing conditions.

The Project would require soil excavation to a maximum excavation depth of 16 feet below the existing grade. As discussed previously, the depth to groundwater is anticipated within 15 feet of the ground surface.¹⁰⁸ In the event that groundwater is encountered during construction, dewatering would be conducted on a one-time or temporary basis during the construction phase and would not result in a significant impact on groundwater recharge or result in the depletion of groundwater supplies. Construction-related dewatering activities would comply with the Construction General Permit, the SFBWRQCB's regulations, and other requirements related to dewatering activities and groundwater resources. Accordingly, impacts on groundwater supplies and groundwater recharge during Project construction would be ***less than significant***.

As described in Section XIX, *Utilities and Service Systems*, the City owns and operates 27 wells (of which 24 are active) that provide approximately 62 percent of the City's water supply through groundwater. Therefore, it is possible that during Project operation, groundwater would be indirectly used and provided to customers through these wells. However, groundwater management in the basin is administered by the Santa Clara Valley Water District (SCVWD), which determined that it has the capacity to meet the city's water requirements and that the Project would not significantly deplete groundwater supplies. Furthermore, the Project's proposed development density is permitted by the General Plan. Therefore, the Project would not deplete or interfere with groundwater supply or recharge or impede sustainable groundwater management in the basin. The Project's impact on groundwater supplies and recharge would be ***less than significant***.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:

- 1. Result in substantial erosion or siltation onsite or offsite? (Less than Significant)***
- 2. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite? (Less than Significant)***

During construction, existing drainage patterns could temporarily be altered through minor grading, potentially resulting in temporary erosion or siltation. BMPs would be implemented to manage runoff and potential erosion, as described in the SWPPP and required by the Construction General Permit. Good housekeeping practices identified in the SWPPP would prevent runoff and contain associated sediment. These practices include using drainage swales or lined ditches to control stormwater flows and protecting storm drain inlets with gravel bags or catch basin inserts.

¹⁰⁸ Secor. 2000. *Phase I Environmental Site Assessment Report, Laguna Clara Apartments*. May 30.

The Project would increase the impervious surface area from approximately 342,700 sf to approximately 388,200 sf. An increase in the amount of impervious surface areas on the Project site would result in more stormwater being collected in stormwater drains or infiltrated compared to existing conditions. However, new stormwater drains and catchment basins would be placed around the perimeter of and throughout the Project site. Stormwater collected from new storm drains in the northern portion of the Project site would discharge to an existing 12-inch storm drain in the northern perimeter road from a new storm drainage lateral. Stormwater collected from the southern portion of the Project site would ultimately discharge from a new stormwater lateral to an existing 24-inch storm drain main line in Homestead Road. Bio-retention areas would be incorporated as part of the Storm Water Quality Control Plan. Bio-retention areas would capture and treat stormwater runoff and allow for water infiltration. The Project would not alter the course of a stream or river because these features are not present on the Project site.

Although 255 trees would be removed, tree protection measures would be employed to preserve the remaining 202 existing trees on the Project site. In addition, 327 new trees and other vegetation would be planted throughout the Project site. As a result, excess soil disturbances would be minimized, and associated soil erosion and siltation impacts would also be reduced. The Project would not substantially alter the existing drainage pattern. Therefore, the Project would not alter drainage patterns that would result in substantial erosion or siltation or increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite. The impacts would be ***less than significant***.

3. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (No Impact)

4. Impede or redirect floodflows? (No Impact)

During construction, the drainage pattern of the site or area may be temporarily altered. However, commonly practiced BMPs, described in detail below, would be implemented to minimize impeding or redirecting floodflows. The Project would increase the amount of impervious surface areas on the Project site, which would result in more stormwater being discharged compared to existing conditions. As discussed above, new stormwater drains and catchment basins would be placed around the perimeter of and throughout the Project site. Stormwater collected from the southern portion of the Project site would ultimately discharge from a new stormwater lateral to an existing 24-inch storm drain main line. The Project would include stormwater treatment controls, in compliance with Municipal Regional Stormwater NPDES Permit C.3 guidelines. Twenty bio-retention areas would be incorporated throughout the Project site as part of the Storm Water Quality Control Plan that would vary in size and include different types of treatment systems, such as bio-treatment ponds, flow-through planters, a combination of these two systems, and self-treating areas. The Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, provide substantial additional sources of polluted runoff, or impede or redirect floodflows. Therefore, there would be ***no impact***.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation? (Less than Significant)

The Project site is not in a tsunami or seiche zone or SFHA. The Project site is within FEMA flood Zone X (shaded), between the 100-year and 500-year floods.¹⁰⁹ As required by Municipal Regional Stormwater NPDES Permit C.3 guidelines, stormwater treatment controls such as bio-retention areas would be incorporated throughout the Project site. In the event of a flood, the bio-treatment areas would reduce the risks associated with a release of pollutants due to Project inundation. Impacts related to Project inundation would be *less than significant*.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (Less than Significant)

As mentioned above, groundwater is likely to be used indirectly during Project operation. Groundwater management of the basin is administered by the SCVWD. The Project would comply with the appropriate water quality objectives for the region. Commonly practiced BMPs would be implemented to control construction site runoff and reduce the discharge of pollutants to storm drain systems from stormwater and other nonpoint-source runoff. Measures range from source controls to the treatment of polluted runoff. BMPs include watering active construction areas to control dust and installing erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, geofabric, or sandbag dykes, to prevent silt runoff to public roadways, storm drains, or waterways. As part of compliance with permit requirements during ground-disturbing or construction activities, implementation of water quality control measures and BMPs would ensure that water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface and groundwater, as defined in the Water Quality Control Plan. The NPDES Construction General Permit also requires stormwater discharges to not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards, including designated beneficial uses. In addition, implementing the appropriate General Plan policies would require the protection of groundwater recharge areas and groundwater resources, as required by a sustainable groundwater management plan. The impacts would be *less than significant*.

¹⁰⁹ Federal Emergency Management Agency. 2009. *Flood Insurance Rate Map #06085C0228H*. May 18.

XI. Land Use and Planning

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

Setting

The Project site is surrounded primarily by residential land uses, ranging from very low to medium densities, and characterized by low-rise single-family homes and apartment complexes that are set back from the roadway.

The City adopted the General Plan in 2010, and updated it in 2014, to accommodate planned housing and employment growth through 2035. The existing Medium-Density Residential General Plan designation for the site allows a density range of 20 to 36 dwelling units per acre. This land use designation is for areas with access to collector or arterial streets or in proximity to neighborhood centers or mixed uses.

The Project site is zoned Moderate-Density Dwelling (R3-25D). The R3-25D zoning district is intended to encourage quality multi-unit housing lots with established percentages of open space requirements. The maximum building height is 25 feet, with a maximum of 25 dwelling units per 1-acre lot. Permitted uses under this zoning designation include two-family dwellings, dwelling groups, multiple-family dwellings, transitional housing, supportive housing, and private garages and accessory buildings.

Discussion

a. Physically divide an established community? (Less than Significant)

As discussed above, the Project site is surrounded by a range of residential land uses that were developed at different times. The Project site itself is a single parcel with apartment buildings. The Project would add an apartment building to a site that is already developed with residential uses. Although the Project would result in the demolition of three apartment buildings, as well as partial demolition of a fourth apartment building, and construction of a new apartment building, the development would occur in an area with identical uses. In addition, the Project would not limit access to existing streets or bicycle and pedestrian pathways within the residential development itself or within the surrounding community. Furthermore, the Project would not create new streets but, rather, would create new pedestrian pathways within the Project site. Therefore, implementation of the Project would not physically divide an established community; the impact would be *less than significant*.

b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (Less than Significant)

As stated above, the Project site is designated Medium-Density Residential under the General Plan. This land use designation is intended for different types of residential development, below-grade parking, street

setbacks, and access to neighborhood centers or mixed uses. In addition, under the Medium-Density Residential land use designation, the maximum density is 36 units per acre. Upon Project completion, the Project site would have 36 units per acre, thereby maintaining consistency with the Medium-Density Residential land use designation. Moreover, as explained in Table 3-19, in addition to the existing land use designation, numerous General Plan policies have been adopted for the purpose of reducing environmental impacts. The Project is also consistent with the General Plan policies. Therefore, the Project would not cause a significant environmental impact due to a conflict with the General Plan. The impact would be ***less than significant***.

The Project site is currently zoned Moderate-Density Multiple Dwelling (R3-25D). The maximum building height under the R3-25D zoning designation is 25 feet, with up to 25 units per acre. Buildings under this designation are required to have minimum driveway lengths of at least 20 feet and setbacks from any street right-of-way. Under this zoning designation, the Project would conflict with the height and density limitations. However, as mentioned in Chapter 2, *Project Description*, a rezoning of the Project site from Moderate-Density Multiple Dwelling (R3-25D) to Medium-Density Multiple Dwelling (R3-36D) is not required under the provisions of AB 3194 (2018) to align the zoning designation with the General Plan designation. The Project would apply the development standards assigned to the R3-36D zoning district to the Project site to be consistent with the General Plan land use designation of Medium-Density Residential. The Project would require architectural review approval for the site and building design. Therefore, the Project would not cause a significant environmental impact due to a conflict with the existing zoning designation for the Project site. The impact would be ***less than significant***.

Table 3-19. Project Consistency with Santa Clara General Plan Land Use Policies

Land Use Policies	Project Consistency
Land Use Policies	
5.3.1-P3: Support high-quality design, consistent with adopted design guidelines and the City's architectural review process.	Consistent. The proposed building would be setback 66 feet from Homestead Road. The Project would feature contemporary materials and detailing, including plaster, wood materials, accent walls, railings, trellises, and balconies. The new residential units would include natural elements and neutral colors that would complement the existing residential buildings. The design of the proposed building would incorporate various surface materials and colors as well as accent elements. These architectural elements would help create visual interest and reduce the perceived height and bulk of the structure by breaking up the building façade. The building and site improvements would be subject to the City's design review process, ensuring that the Project would not adversely affect the visual quality of the area, and conform to current architectural and landscaping standards.
5.3.1-P4: Encourage new development that meets the minimum intensities and densities specified in the land use classifications or as defined through applicable focus area, neighborhood compatibility, or historic preservation policies of the General Plan.	Consistent. New residential development under the Project would be designed to meet the site's existing land use designation of Medium-Density Residential. The Project would develop up to 36 units per acre, as specified under this designation.

Land Use Policies	Project Consistency
5.3.1-P9: Require that new development provide adequate public services and facilities, infrastructure, and amenities to serve new employment or residential growth.	Consistent. The Project would be served by existing water, wastewater, electrical, natural gas, and telecommunications infrastructure. As discussed in Section XV, <i>Public Services</i> , the employees and new residents generated by the Project would have a negligible effect on the permanent population of the city. No new or physically altered fire, emergency, police, school, or library facilities would be required as a result of Project implementation. In addition, the Project would provide onsite amenities and dedicated parkland and pay an in-lieu fee for parkland. Onsite resources and the payment of in-lieu fees would offset any potential effects on existing parks and recreational facilities. Therefore, park and recreational facilities would not be adversely affected.
5.3.1-P10: Provide opportunities for increased landscaping and trees in the community, including requirements for new development to provide street trees at a minimum ratio of 2:1 for onsite or offsite replacement of trees removed as part of a proposal to help increase the urban forest and minimize the heat-island effect.	Consistent. The Project would remove approximately 255 of the 457 trees on the Project site, of which 234 are considered healthy. Therefore, to meet the 2:1 replacement ratio, the Project Sponsor would be required to plant at least 468 new trees on the Project site, and a tree replacement plan would be required as a standard condition of approval for the Project, consistent with General Plan Policy 5.3.1-P10. Consistent with the intent of this policy, which is to increase the urban forest and minimize the heat-island effect, the Project would plant up to 327 new trees (including Japanese maple, red maple, cedar, live oak, and Carolina cherry laurel) throughout the Project site, for a total of 510 trees (including the 202 preserved existing trees). An additional 141 trees would be planted offsite to meet the full 2:1 replacement ratio for the 234 removed healthy trees.
5.3.1-P29: Encourage the design of new development to be compatible with, and sensitive to, nearby existing and planned development, consistent with other applicable General Plan policies.	Consistent. The proposed building would be one or two stories higher than the surrounding low- to mid-rise structures. However, the façade of the proposed building would be visually similar to the surrounding uses, which are primarily residential uses. The Project area is developed with buildings that feature a mix of architectural styles, with no particular design aesthetic. The proposed building design would be compatible with the mixed visual character of the area.
5.3.2-P11: Maintain the existing character and integrity of established neighborhoods through infill development that is in keeping with the scale, mass, and setbacks of existing or planned adjacent development.	Consistent. The Project would feature contemporary materials and detailing, including plaster, wood materials, accent walls, railings, trellises, and balconies. The new residential units would include natural elements and neutral colors that would complement the existing residential buildings.

Land Use Policies	Project Consistency
Air Quality Policies	
5.10.2-P3: Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.	Consistent. In accordance with Mitigation Measure AQ-1 in Section III, <i>Air Quality</i> , the Project Sponsor would ensure that all off-road diesel-powered equipment used during construction would be equipped with engines that meet USEPA Tier 4 Final emissions standards to reduce dust emissions. In addition, the Project would include 40 electric-vehicle parking spaces.
5.10.2-P4: Encourage measures to reduce GHG emissions to reach 30 percent below 1990 levels by 2020.	Consistent. Water-conservation and energy-efficiency measures included in the Project would reduce GHG emissions associated with the generation of electricity.
5.10.2-P6: Require “best management practices” for construction dust abatement.	Consistent. In accordance with Mitigation Measure AQ-2, included in Section III, <i>Air Quality</i> , the Project Sponsor would implement BAAQMD-recommended BMPs to control fugitive dust.
Energy Policies	
5.10.3-P1: Promote the use of renewable energy resources, conservation, and recycling programs.	Consistent. The Project would include a number of sustainability features, including 40 electric-vehicle parking spaces, Energy Star appliances, LED lighting throughout the apartments, and water reuse systems, and achieve a LEED Gold rating. In addition, solar panels would be installed on the roofs of the new buildings, generating at least 680,000 kilowatt hours per year, which is approximately 85 percent of the anticipated energy usage.
5.10.3-P4: Encourage new development to incorporate sustainable building design, site planning, and construction, including solar opportunities.	
5.10.3-P6: Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.	
P.10.3-P7: Encourage the installation of solar energy collection through solar hot water heaters and photovoltaic arrays.	
Water Policies	
5.10.4-P7: Require the installation of native and low-water-consumption plant species when landscaping new development and public spaces to reduce water usage.	Consistent. Up to 327 new trees would be planted throughout the Project site. In addition, drought-tolerant shrubs and ground cover would be planted throughout the site to minimize irrigation requirements.
Noise Policies	
5.10.6-P3: New development should include noise control techniques to reduce noise to acceptable levels, including site layout (setbacks, separation, and shielding), building treatment (mechanical ventilation systems, sound-rated windows, solid-core doors, and baffling), and structural measures (earthen berms and sound walls).	Consistent. To comply with the strictest limits of the Santa Clara City Code, heating, ventilation, and air-conditioning (HVAC) units would be placed more than 20 feet from exhaust fans because the rooftop units on the new building would be one or two stories above the surrounding buildings and would not be at the building perimeter. In addition, roof-mounted HVAC equipment would not have a direct line of sight to adjacent buildings and would be screened by the roof parapet, which would result in further attenuation of noise shielding.

XII. Mineral Resources

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

Setting

The City is in an area that has been zoned by the State as Mineral Resource Zone 1 (MRZ-1) with respect to aggregate materials.¹¹⁰ Geologic information for MRZ-1 areas indicates that no significant mineral deposits are present or little likelihood exists for their presence. The area is not known to support significant mineral resources of any type, and no mineral resources are currently being extracted in the city. The Office of Mine Reclamation's list of mines (the AB 3098 list) that are regulated under the Surface Mining and Reclamation Act (SMARA) does not include any mines within the city.^{111,112}

Discussion

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State? (No Impact)

According to the General Plan EIR, the City does not have potential for the occurrence of mineral resources. There are no active or inactive mines within the City limits. Therefore, the Project would have **no impact** on the availability of a known mineral resource.

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? (No Impact)

According to the General Plan EIR, there are no existing mineral resource recovery sites within the city. As a result, the Project would not alter the availability of locally important mineral recovery sites, and **no impact** would occur.

¹¹⁰ California Department of Conservation, Division of Mines and Geology. 1996. *Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region*. Available: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_96-03/OFR_96-03_Text.pdf. Accessed: January 22, 2020.

¹¹¹ California Department of Conservation. 2020. *AB 3098 List*. Available: <https://www.conservation.ca.gov/dmr/smara-mines>. Accessed: January 22, 2020.

¹¹² California Department of Conservation, Division of Mine Reclamation. 2016. *Mines Online, Santa Clara, California*. Available: <http://maps.conservation.ca.gov/mol/index.html>. Accessed: January 22, 2020.

XIII. Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:				
a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Generate excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the Project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Noise Background

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, an evaluation of noise is necessary when considering the environmental impacts of a project.

The sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum. Therefore, noise measurements are weighted more heavily toward frequencies to which humans are sensitive in a process called “A-weighting,” written as “dBA” and referred to as “A-weighted decibels.”

In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.

For a point source such as a stationary compressor or construction equipment, sound attenuates geometrically at a rate of 6 dB per doubling of distance. For a line source such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance.¹¹³ Atmospheric conditions, including wind, temperature gradients, and humidity, can change how sound propagates over distance and affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical

¹¹³ Federal Transit Administration. 2018. *Transit Noise and Vibration Impact Assessment*. FTA Report No. 0123. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: April 11, 2019.

energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement.

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include single- and multi-family residential areas, health care facilities, lodging facilities, and schools. Recreational areas where quiet is an important part of the environment can also be considered sensitive to noise. Some commercial areas may be considered noise sensitive as well, such as outdoor restaurant seating areas.

Vibration Background

Operation of heavy construction equipment, particularly the types used for pile driving and pavement breaking, creates seismic waves that radiate along the ground surface and downward. These surface waves can be felt as ground vibration. Vibration from the operation of such equipment can result in effects ranging from annoyance to structural damage. Varying geologies and distances will result in different vibration levels, along with different frequencies and displacements. In all cases, vibration amplitudes decrease with increasing distance.

Perceptible ground-borne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity at which these particles move, referred to as the peak particle velocity (PPV), is the commonly accepted descriptor of vibration amplitude.

City of Santa Clara General Plan

The General Plan outlines the levels of exterior noise that are considered “normally acceptable;” “conditionally acceptable, with required design and insulation measures to reduce noise levels;” and “normally unacceptable” for residential, educational, recreational, commercial, industrial, and open space land uses (subject to further regulation by the Santa Clara City Code). For residential uses, exterior noise levels of 55 dBA community noise equivalent level (CNEL) are considered normally acceptable, while levels between 55 dBA CNEL and 70 dBA CNEL are considered conditionally acceptable as long as reduction measures are implemented to reduce interior noise to 45 dBA. Noise levels above 70 dBA CNEL are considered normally unacceptable for residential land uses.

Santa Clara City Code

Chapter 9.10 of the Santa Clara City Code applies to the regulation of noise and vibration. The purpose of the noise ordinance is to protect the public welfare by limiting unnecessary, excessive, and unreasonable noise or vibration. Section 9.10.040 specifies the exterior noise limits that apply to land use zones within the city, as provided in Table 3-20.

Table 3-20. Santa Clara City Code Schedule A, Exterior Sound or Noise Limits

Receiving Zoning Category	Time Period	Maximum Noise Level (dBA)
Category 1		
Single-family and Duplex Residential Units (R1, R2):	Commencing at 7:00 a.m. and ending at 10:00 p.m. that evening	55
	Commencing at 10:00 p.m. and ending at 7:00 a.m. the following morning	50
Category 2		
Multiple-family Residential Units, Public Space (R3, B):	Commencing at 7:00 a.m. and ending at 10:00 p.m. that evening	55
	Commencing at 10:00 p.m. and ending at 7:00 a.m. the following morning	50
Category 3		
Commercial, Office (C, O):	Commencing at 7:00 a.m. and ending at 10:00 p.m. that evening	65
	Commencing at 10:00 p.m. and ending at 7:00 a.m. the following morning	60
Category 4		
Light Industrial (ML, MP):	Anytime	70
Heavy Industrial (MH):	Anytime	75
Source: City of Santa Clara. 2020. Chapter 9.10. Regulation of Noise and Vibration - 9.10.040 Noise or sound regulation. Available: https://www.codepublishing.com/CA/SantaClara/#!/html/SantaClara09/SantaClara0910.html . Accessed: January 29, 2020.		

Noise levels from fixed sources are limited at residential uses and public space land uses to 55 dBA during the daytime (7:00 a.m. to 10:00 p.m.) and 50 dBA during the nighttime (10:00 p.m. to 7:00 a.m.). The noise limits are not applicable to emergency work, including the operation of emergency generators, pumps, or other equipment, necessary to provide services during an emergency but do apply to the testing of emergency equipment.

Section 9.10.040 of the Santa Clara City Code establishes the following regulations for construction work:

Construction activities are not permitted within 300 feet of residentially zoned property, except between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 6:00 p.m. on Saturdays. No construction is permitted on Sundays or holidays.

Section 9.10.050 of the Santa Clara City Code pertains to vibration:

It shall be unlawful for any person to operate or cause, permit, or allow the operation of, any fixed source of vibration of disturbing, excessive, or offensive vibration on property owned, leased, occupied, or otherwise controlled by such person, such that the vibration originating from such source is above the vibration perception threshold of an individual at the closest property line point to the vibration source on the real property affected by the vibration.

Existing Noise Environment and Land Uses

The Project site is bound by single-family residential units and a church facility to the north, single-family residential units to the east, Homestead Road to the south, and Quince Avenue to the west. Homestead

Road and the surrounding area are characterized primarily by residential subdivisions, consisting of single and multi-family housing and commercial properties separated by major regional roadways. Homestead Road is a major thoroughfare, bisecting the area in an east/west direction; therefore, traffic noise is the primary source of noise in the Project vicinity. Other typical urban noise sources are also present, including aircraft overflights, landscaping equipment, stereos, etc. Several schools, including Stratford School – Santa Clara Pomeroy, Santa Clara High School, and John Sutter Elementary School, are also in the immediate vicinity of the Project site.

As noted above, the Project site is surrounded by residential uses. The new building would be directly adjacent to occupied residential buildings within the same housing development. The nearest units that are not affiliated with the housing development are the single-family residences approximately 50 feet northwest of the new building site and the single-family residences 100 feet south of the new building site, across Homestead Road. In addition, a multi-family housing development is located on Quince Avenue, approximately 250 feet to the west, and a number of single-family residences are 280 feet to the east. The nearest church is approximately 350 feet north of the new building site, while the nearest school, Stratford School, is approximately 700 feet away.

Discussion

- a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies? (Less than Significant with Mitigation)***

Construction

The Project would demolish three of the two-story apartment buildings on the site and partially demolish an additional two-story apartment building in the center of the Project site, along with two of the one-story accessory buildings and four carport structures. The Project would construct a three- and four-story apartment building in their place. Demolition and construction activities would generate noise, temporarily increasing noise levels at adjacent land uses. The significance of potential noise impacts resulting from demolition and construction depends on the noise generated by the various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive receptors. Potential construction noise impacts are typically more substantial when construction occurs during noise-sensitive times of the day (e.g., early morning, evening, nighttime hours near residential uses), the construction occurs in areas immediately adjoining noise-sensitive land uses, or the construction lasts for extended periods of time.

As discussed above, construction activities are not permitted within 300 feet of residentially zoned property, except between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 6:00 p.m. on Saturdays. In addition, no construction is permitted on Sundays or holidays. The Project Sponsor has confirmed that construction activities would proceed in accordance with the allowable times specified in the noise ordinance. Thus, the Project's construction activities would be limited to the hours identified above, in accordance with Santa Clara City Code.

The specific construction equipment expected to be used for Project construction is included in Table 3-21. This list of equipment was generated through CalEEMod, which was used for the air quality analysis. Table 3-21 shows the corresponding maximum sound level (L_{max}) and equivalent sound levels (L_{eq}) at 50 feet and the typical acoustical use factors for each piece of construction equipment expected to be used during construction of the Project. The acoustical use factor, or utilization factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., the noisiest condition)

during construction. It is used to estimate L_{eq} values from L_{max} values. For example, the L_{eq} value for a piece of equipment that operates at full power 50 percent of the time (acoustical use factor of 50) is 3 dB less than the L_{max} value.

Table 3-21. Construction Noise Equipment Data for Each Project Phase

Equipment	L_{max} at 50 feet (dBA) ^a	L_{eq} at 50 feet (dBA) ^b	Acoustical Usage/Utilization Factor
Phase 1 – Demolition			
Concrete/Industrial Saws	90	83	20%
Excavators	81	77	40%
Rubber Tired Dozers	82	78	40%
Phase 2 – Site Preparation			
Rubber-Tired Dozers	82	78	40%
Tractors/Loaders/Backhoes	84	80	40%
Phase 3 – Grading			
Excavators	81	77	40%
Graders	85	81	40%
Rubber-Tired Dozers	82	78	40%
Scrapers	84	80	40%
Tractors/Loaders/Backhoes	84	80	40%
Phase 4 – Building Construction			
Cranes	81	73	16%
Forklifts ^c	84	80	40%
Generator Sets	81	78	50%
Tractors/Loaders/Backhoes	84	80	40%
Welders	74	70	40%
Phase 5 – Paving			
Pavers	77	74	50%
Paving Equipment	90	83	20%
Rollers	80	73	20%
Phase 6 – Architectural Coating			
Air Compressors	78	74	40%

Notes:

- a. These values represent the loudest noise levels generated by each equipment type at a distance of 50 feet.
- b. These values represent the average noise levels generated by each equipment type at a distance of 50 feet.
- c. Represented by “tractor,” from the Federal Highway Administration’s *User’s Guide*.

Source: Federal Highway Administration. 2006. *Roadway Construction Noise Model User’s Guide*. Available: http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf.

To provide a conservative and reasonable worst-case analysis of potential noise impacts from the use of construction equipment during Project construction, it was assumed that the three loudest pieces of equipment for each construction phase would operate simultaneously in the same location on the Project

site. The noise levels from the three loudest pieces of equipment were combined for each phase, and the results of this analysis are shown in Table 3-22 for increasing distances.

Table 3-22. Construction Noise Levels by Phase (dBA)

Distance between Source and Receiver (feet)	Demolition ^a	Site Preparation ^b	Grading/ Excavation ^c	Building Construction ^d	Paving ^e	Architectural Coating ^f
25	93	92	93	92	94	82
50	85	85	85	85	86	74
100	78	77	78	77	79	66
200	70	70	70	70	71	59
300	66	65	66	65	67	55
400	63	62	63	62	64	51
500	60	60	60	60	61	49
600	58	58	58	58	59	47
700	56	56	56	56	58	45
800	55	55	55	55	56	44
900	54	53	54	53	55	43
1,000	53	52	53	52	54	41

Geometric attenuation based on 6 dB per doubling of distance. This calculation does not include the effects, if any, of local shielding.

L_{eq} noise is presented in dBA units, which approximate the frequency response of the human ear.

^a For this activity, the three loudest pieces of equipment are a concrete saw and two rubber-tired dozers.

^b For this activity, the three loudest pieces of equipment are all tractors.

^c For this activity, the three loudest pieces of equipment are a grader and two scrapers.

^d For this activity, the three loudest pieces of equipment are all forklifts.

^e For this activity, the three loudest pieces of equipment are two paver (e.g., a pavement scarifier) and one paver.

^f For this activity, the only equipment is an air compressor.

As previously noted, the nearest residential land uses to the Project site are onsite and adjacent to the future location of the new building, which, as a reasonable worst-case scenario, can be assumed to be 25 feet from the existing residential buildings. The nearest offsite residential land use, as noted above, is 50 feet away. As shown in Table 3-22, the reasonable worst-case combined construction noise at 25 feet from Project construction areas could be up to 94 dBA L_{eq} for the loudest construction phase (i.e., paving), which is an estimate, based on distance alone and not accounting for ground effect attenuation or shielding offered by intervening buildings. Shielding and ground effects could reduce this noise level by approximately 5 additional dB, depending on the amount of shielding between construction activities and a particular residence.

Because construction activities would comply with the time limits specified in the Santa Clara City Code, the noise generated by construction would not be subject to the noise ordinance limits, even at distances of less than 300 feet from residentially zoned properties. Construction is thus considered to be exempt from the noise ordinance, per Section 9.10.070 (Exceptions) of the Santa Clara City Code. However, the Project's construction activity would nevertheless cause an increase in the ambient noise levels of the

area. The increase in noise may be considered substantial at residences adjacent to the new building because it would be a sustained, noticeable increase over ambient noise levels, resulting in a significant impact. Mitigation Measure M-NOI-1 would be required to reduce the severity of the construction noise increase. Mitigation Measure M-NOI-1 would require the construction contractor to implement noise control measures to attenuate noise that could affect nearby residents. With implementation of Mitigation Measure M-NOI-1, noise from Project construction would not result in a substantial increase in noise levels that would be in excess of applicable local standards, and the impact would be ***less than significant with mitigation***.

Mitigation Measure M-NOI-1: Construction Noise Control Measures.

The Project Sponsor shall develop a set of site-specific noise attenuation measures. Prior to commencement of construction activities, the Project Sponsor shall submit the construction noise control plan to the City for review and approval. Noise attenuation measures shall be identified in the plan and implemented to reduce noise levels to the greatest extent feasible. Noise measures may include, but are not limited to, the following.

- Require that all construction equipment powered by gasoline or diesel engines have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.
- Prohibit gasoline or diesel engines from having unmuffled exhaust systems.
- Ensure that equipment and trucks for Project construction use the best available noise control techniques (e.g., improved mufflers, redesigned equipment, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) wherever feasible. According to the Federal Highway Administration, the use of shields or barriers around noise sources can reduce noise by 5 to 10 dBA, depending on the type of barrier used.
- Use “quiet” gasoline-powered or electrically powered compressors as well as electric rather than gasoline- or diesel-powered forklifts for small lifting, where feasible.
- Locate stationary noise sources, such as temporary generators, concrete saws, and crushing/processing equipment, as far from nearby receptors as possible; muffle and enclose noise sources within temporary enclosures and shield with barriers, which could reduce construction noise by as much as 5 dB; or implement other measures, to the extent feasible.
- In response to noise complaints received from people in the Project area, monitor the effectiveness of noise attenuation measures by taking noise measurements and adjust the measures as necessary to reduce complaints.

Operations

Traffic Noise

The Project would have the potential to increase traffic in the vicinity of the Project site, resulting in an increase in noise levels in the area. A site-specific traffic analysis was not required for the Project;¹¹⁴ therefore, the impacts of traffic noise are evaluated using intersection volume data at Congestion

¹¹⁴ As noted in Section XVII, *Transportation*, the Project would generate fewer than 100 new peak-hour trips. A Transportation Impact Analysis is not required. Shariat, pers. comm. August 15, 2019—email to Kirsten Chapman of ICF stating a Transportation Impact Analysis is not required for the Project.

Management Plan (CMP) intersections, as defined by VTA. Two CMP intersections are in the vicinity of the Project: Homestead Road and Lawrence Expressway and Homestead Road and San Tomas Expressway. Traffic volumes on Homestead Road between the Lawrence and San Tomas Expressways, a segment of roadway that includes the Project site, range from approximately 1,300 to 2,300 vehicles during the PM Peak Hour. On the Lawrence and San Tomas Expressways near Homestead Road, the volumes are in the range of 4,200 to 5,900 vehicles per hour.¹¹⁵

Based on an assessment of trip generation by the Project's transportation consultant, there would be 62 and 75 net new trips in the AM and PM Peak Hours, respectively, and 917 net new trips daily.¹¹⁶ Given the existing volumes on the roadways in the area, the new Project trips are not expected to represent a substantial increase. For instance, 75 trips in the PM Peak Hour would represent an increase of approximately 6 percent on Homestead Road between the Lawrence and San Tomas Expressways. A significant noise impact could occur if the Project were to increase traffic noise by 3 dB or more, which is considered to be the threshold at which a noise increase would be perceptible. Traffic noise typically produces a noticeable increase in noise (i.e., 3 dB) when there is a doubling, or a 100 percent increase, of the existing traffic volumes on a roadway. On Homestead Road, the 6 percent increase would fall well below 100 percent and thus would not be noticeable. Given the relatively small number increase in hourly trips from the Project, it is unlikely that the Project would double the traffic volumes on any roadway in the vicinity. As such, traffic noise impacts would be *less than significant*.

Other Operational Noise Sources

The new building would require a boiler and HVAC units, which would be installed on the building roof and in the below-grade parking garage. Exhaust from the HVAC units would be ventilated through the roof and exterior walls. The Project would also include a car elevator in the garage. Because the car elevator would be enclosed by the garage walls, it is not anticipated to be an appreciable source of noise outside of the garage.

Based on manufacturer's data provided by the Project Sponsor, HVAC equipment installed on the rooftop and in the garage of the proposed building could generate an average noise level of approximately 42 dBA L_{eq} at a distance of 50 feet.¹¹⁷ This estimate assumes that the largest HVAC unit would be used, using the range of sizes given in the manufacturer's data. To comply with the strictest limit of the Santa Clara City Code shown in Table 3-20 (e.g., 50 dBA at residential uses during the nighttime hours), HVAC units or exhaust fan would need to be approximately 20 feet away, or farther, from existing residential uses. A distance of more than 20 feet between the HVAC units and exhaust fans is likely to occur because the rooftop units on the new building would be one or two stories above the surrounding buildings and would not be located directly at the building perimeter. In addition, roof-mounted HVAC equipment would not have a direct line of sight to adjacent buildings because it would be screened by a roof parapet, which would result in further attenuation of noise from shielding. Consequently, noise from Project-related HVAC equipment would not be expected to exceed the 50 dBA nighttime exterior noise level. Because HVAC noise would

¹¹⁵ Black, pers. comm. January 2, 2020—email conversation with Jennifer Andersen of ICF regarding traffic volumes.

¹¹⁶ Hexagon Transportation Consultants, Inc. 2019. *Trip Generation Analysis for the Proposed Project Located at 3131 Homestead Road in Santa Clara, California*. July 22.

¹¹⁷ This estimate is based on an HVAC unit with a sound power level of 74 dBA. Sound power level is converted to sound pressure level using the following equation: $\text{sound pressure} = \text{sound power} - 10 \cdot \log(2\pi \cdot \text{distance}^2) + 10$. Hoover and Keith. 2000. *Noise Control for Buildings, Manufacturing Plants, Equipment, and Products*. Houston, TX.

not be expected to exceed noise standards at the adjacent noise-sensitive land uses, noise impacts from HVAC equipment would be *less than significant*.

b. Generate excessive ground-borne vibration or ground-borne noise levels? (Less than Significant with Mitigation)

Construction activity is a main cause of vibration effects. The two main concerns associated with construction-generated vibration are structural damage and annoyance/sleep disturbance. The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. The potential for construction-related vibration impacts depends on the proximity of construction activities to sensitive receptors, how many pieces of construction equipment are operating and the types, and the duration of construction. Table 3-23 summarizes the estimated vibration levels that would be generated by the anticipated construction equipment.

Table 3-23. Vibration Level for Proposed Construction Equipment

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 100 Feet	PPV at 150 Feet	PPV at 200 Feet
Large Bulldozer	0.089	0.031	0.017	0.011	0.006
Loaded Trucks	0.076	0.027	0.015	0.010	0.005
Jackhammer	0.035	0.012	0.007	0.004	0.002
Small Bulldozer	0.003	0.001	0.001	0.000	0.000

Source: Federal Transit Administration. 2018. *Transit Noise and Vibration Impact Assessment Manual*. Office of Planning and Environment. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: January 29, 2020.

Note: PPV is the peak particle velocity, in units of inches per second.

Construction – Annoyance

Ground-borne vibration can cause disturbances for people living or working near vibration sources. Numerous studies have been conducted to characterize the human response to vibration. Table 3-24 provides the California Department of Transportation (Caltrans) guidelines regarding vibration annoyance potential.

Table 3-24. Caltrans Guidelines for Vibration Annoyance Potential

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation. 2020. *Transportation and Construction Vibration Guidance Manual*. Table 20. September. Available: <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf>. Accessed: January 29, 2020.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or the use of drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

In accordance with Section 9.10.050 of the Santa Clara City Code, which pertains to vibration, construction activity may result in adverse impacts at residences near the new building site because vibration may be above the threshold of perception. As indicated in Table 3-23, above, a large bulldozer or a loaded truck would cause vibration that is perceptible at distances of 25 feet but not at distances of 50 feet. Based on the perceptibility threshold of 0.04 inch per second, vibration from a large bulldozer would become imperceptible at distances of approximately 43 feet. As such, the Project may result in perceptible vibration when equipment operates within approximately 43 feet of existing residences; this would be in violation of the Santa Clara City Code and a potentially significant impact.

To mitigate the ground-borne vibration impacts from construction, Mitigation Measure M-NOI-2 would be required, which would provide advance written notification to all residences and other sensitive uses within 50 feet of the construction site. The notification to residents would provide contact information through which noise and vibration complaints could be directed, and a construction vibration disturbance coordinator would be responsible for resolving complaints and concerns through reasonable measures. The coordinator would communicate the issues to the construction contractor to determine alternative methods of construction that would minimize vibration at the affected residences. Although the specific distance at which vibration would be perceptible is 43 feet for the large bulldozer, a notification distance of 50 feet is more conservative and accounts for uncertainties and may also be easier to measure. With implementation of this mitigation measure, vibration effects during Project construction related to annoyance would not be substantial at nearby residential land uses, and the impact would be ***less than significant with mitigation***.

Mitigation Measure M-NOI-2: Construction Vibration Notification and Disturbance Coordinator.

The Project Sponsor shall provide advance written notification of the proposed construction activities to all residences and other sensitive uses within 50 feet of the construction site. Notification shall include a brief overview of the Project and its purpose as well as the proposed construction activities and schedule. It shall also include the name and contact information for a designated disturbance coordinator, who will be responsible for ensuring that reasonable measures are implemented to address complaints received.

This measure also requires that the Project Sponsor designate a representative to act as construction vibration disturbance coordinator and be responsible for resolving construction vibration concerns. She or he shall be available during regular business hours to monitor and respond to concerns; if construction hours are extended, the disturbance coordinator shall also be available during the extended hours. In the event that a vibration complaint is received, she or he shall be responsible for determining the cause of the complaint and ensuring that all reasonable measures are implemented to address the problem, such as communicating with the construction contractor regarding the specific issues and determining alternative methods of construction to minimize vibration at nearby residences.

Construction – Building Damage

As noted previously, the Project vicinity is populated with many residential structures, some of which may be classified as older and some newer. With respect to potential damage impacts, the damage criterion for older and new residential structures is a PPV of 0.3 and 0.5 inch per second, respectively, for continuous/frequent intermittent sources of vibration, such as that from construction equipment, as shown in Table 3-25. As shown in Table 3-23, above, vibration levels from construction equipment would

be well below these thresholds at all distances. Therefore, although the buildings would still experience ground-borne vibration from construction, no damage-related effects would occur at the nearby structures, and the impact would be *less than significant*.

Table 3-25. Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/ Frequent Intermittent Sources
Extremely Fragile Historic Buildings, Ruins, Ancient Monuments	0.12	0.08
Fragile Buildings	0.2	0.1
Historic and Some Old Buildings	0.5	0.25
Older Residential Structures	0.5	0.3
New Residential Structures	1.0	0.5
Modern Industrial/Commercial Buildings	2.0	0.5

Source: California Department of Transportation. 2020. *Transportation and Construction Vibration Guidance Manual*. Table 19. September. Available: <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf>. Accessed: January 29, 2020.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or the use of drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

in/sec = inch per second; PPV = peak particle velocity

Operation

Ground-borne vibration during operation of the Project would result mainly from increased traffic. However, vibration generated by traffic traveling on roadways is usually below the threshold of perception at nearby land uses, unless there are severe discontinuities, such as large potholes, in the roadway surface. It is reasonable to assume that roadways in the Project area are and will continue to be reasonably maintained, with no severe discontinuities; impacts would be *less than significant*.

c. Be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the Project area to excessive noise levels? (No Impact)

The Project site is approximately 3 miles southwest of Norman Y. Mineta San Jose International Airport, the nearest public airport. The Project is not within 2 miles of any private airstrips. People residing or working in the Project area would thus not be exposed to excessive noise levels from aircraft or airport operations. There would be *no impact*.

XIV. Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Displace a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

The Project site is currently occupied by 24 two-story apartment buildings with 264 dwelling units; two accessory buildings that house the leasing office, clubhouse, and the central boiler; and 13 carports. The buildings at the Project site have 534 residents and six employees. According to the California Department of Finance, the City had a population of approximately 128,717 as of January 1, 2019.¹¹⁸ ABAG projects that the city's population will increase to 137,215 by 2025.¹¹⁹ Because of this projected growth, the General Plan concluded that the City will be able to accommodate the increasing population through the construction and use of higher-density housing. The average household size of 2.71 people is expected to remain consistent, thereby mirroring a growth rate similar to that of the population projections.^{120,121} Employment in the City in 2015 was similar to the city's population, with 136,980 employed individuals; employment is expected to increase to 151,310 by 2025.¹²²

¹¹⁸ State of California Department of Finance. 2019. *E-1 Population Estimates for Cities, Counties, and the State—January 1, 2018, and 2019*. May. Available: <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/>. Accessed: January 24, 2020.

¹¹⁹ Association of Bay Area Governments. 2019. *Projections 2040*.

¹²⁰ State of California Department of Finance. 2020. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2020 with 2010 Benchmark*. May. Available: <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/>. Accessed: June 23, 2020.

¹²¹ Association of Bay Area Governments. 2019. *Projections 2040*.

¹²² Ibid.

Discussion

a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? (Less than Significant)

As mentioned previously, the Project site is designated Medium-Density Residential, a designation that allows up to 36 units per acre. Upon Project completion, the Project site would house up to 1,030 residents, including 496 new residents, and provide 225 new residential units; overall, the site would have 183 additional residential units.¹²³,¹²⁴ The 496 new residents would represent approximately 0.36 percent of the city's projected total population in 2025. The 183 new residential units would help house the new residents generated by the Project and achieve the maximum density of 36 dwelling units per acre consistent with the General Plan land use designation. Thus, the increase in population associated with the Project would be within the City's anticipated growth and would not result in substantial unplanned population growth. In addition, the Project would ultimately help to accommodate the population growth projections for Santa Clara by creating more residential housing opportunities, and shaping and directing that growth within an appropriate location that is already designated for residential use.

The Project is anticipated to temporarily employ up to 85 workers during construction and 10 employees once the Project is fully operational. It is anticipated that the construction employees associated with the Project who are not already living in the City would commute from their residences elsewhere in the Bay Area rather than permanently relocate to Santa Clara from more-distant locations; this is typical for employees in the various construction trades. Similarly, it is assumed that the 10 employees who would be working once the Project is fully operational would also seek living accommodations elsewhere rather than at the Project site. However, in the worst-case scenario, if both construction and operational employees were to relocate to the city, these employees would represent approximately 0.062 percent and 0.007 percent, respectively, of the city's total projected population in 2025 and 0.056 percent and 0.007 percent, respectively, of the city's projected number of jobs in 2025. Therefore, this number of construction and operational employees would have a negligible effect on population and housing growth in the city. Furthermore, because the Project would involve redevelopment of an existing residential site, infrastructure would be sized to meet the needs of the new proposed building and its residents, as discussed in Section XIX, *Utilities and Service Systems*.

Because the proposed infrastructure would be sized to meet the needs of the Project, it would not lead to unplanned indirect population growth or the need for additional housing beyond that expected to be generated under full Project build-out. The proposed open space changes that would be incorporated as part of the Project would ultimately improve pedestrian circulation throughout the Project site and surrounding area and have no impact on population and housing because they would not induce unplanned population growth in the Project area, either directly or indirectly. Therefore, the Project would not induce a substantial level of unplanned population growth in the city, either directly or indirectly, and the impact would be ***less than significant***.

¹²³ There are 534 existing residents on the Project site and the Project would add 496 new residents upon project completion. Therefore, 534 existing residents + 496 new residents = 1,030 total residents.

¹²⁴ There are 264 existing residential units on the Project site, and 42 of them will be demolished during Project construction. Upon Project completion, 225 new residential units would be constructed, resulting in 447 residential units total ((264 existing units -42 demolished units) + 225 new units= 447 total units). This would result in a net increase of 183 residential units (447 total units-264 existing units= 183 net increase units).

b. Displace a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere? (Less than Significant)

The Project would include demolition of three of the two-story apartment buildings on the site and partial demolition of a fourth as well as construction of a single three- and four-story apartment building with 225 residential units. The Project would create 78,026 sf of residential space, 450 vehicle parking spaces, and 63,667 sf of open space. Project construction would temporarily result in the displacement of 42 existing housing units. However, in compliance with the California Tenant Protect Act, the Project Sponsor would work with the existing residents in order to meet all relocation needs and provide relocation assistance as needed. In addition, upon Project completion, the new three- and four-story apartment building would result in 183 new residential units and 496 new residents. The proposed open space changes that would be implemented as part of the Project would not have any impact on population and housing because they would not displace any existing housing units or people. Therefore, the Project would not decrease the city's total housing stock and would not necessitate the construction of replacement housing elsewhere. This impact would be ***less than significant***.

XV. Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

Fire Protection

There are 12 Santa Clara Fire Department (SCFD) fire stations in the City. The Project site is approximately 0.3 mile west of Fire Station 3, located at 2821 Homestead Road. This full-service station serves the entirety of the Project site with a fire engine and paramedic support. The northern boundary of the Project site is adjacent to the region serviced by Fire Station 7, which is 0.5 mile northwest of the site.¹²⁵ The General Plan establishes a response-time goal for the SCFD of 3 minutes or less citywide. Neither current traffic flow nor building standards in the City have impeded SCFD services. The City participates in the Santa Clara County Local Fire Service and Rescue Mutual Aid Plan to ensure efficient handling of fires and other emergencies.

Police Protection

The Santa Clara Police Department (SCPD) provides law enforcement services in the city. The headquarters of the SCPD is at 601 El Camino Real, approximately 2.6 miles northeast of the Project site; the north side substation is at 3992 Rivermark Parkway, approximately 4.2 miles northeast of the Project site.¹²⁶ In 2018, the SCPD had 159 sworn police officers, 80 civilian personnel, and 23 reserve officers, resulting in a ratio of 1.25 sworn officers per 1,000 City residents.¹²⁷ The General Plan also establishes a response-time goal SCPD of 3 minutes or less for high-priority calls. In 2018, the average SCPD response time after dispatch was 4 minutes and 26 seconds, which exceeds the threshold.

¹²⁵ City of Santa Clara. n.d. *City of Santa Clara: Public Safety. Fire Stations and Police Stations within Santa Clara*. Available: <http://arcg.is/9eT5z>. Accessed: January 6, 2020.

¹²⁶ City of Santa Clara. 2019. *Santa Clara Police Department*. Available: <https://www.santaclaraca.gov/our-city/departments-g-z/police-department>. Accessed: January 6, 2020.

¹²⁷ Santa Clara Police Department. 2018. *Fact Sheet*. Available: <https://www.santaclaraca.gov/our-city/departments-g-z/police-department/about-us/fact-sheet>. Accessed: January 16, 2019.

Schools

Santa Clara Unified School District (SCUSD) consists of 17 elementary schools; one K–8 school; three middle schools; five high schools, including an early-college high school associated with Mission College; and one alternative K–12 school.¹²⁸ In addition to these active school sites, the 2014 General Plan update notes that four SCUSD school sites are currently closed but may open to support future needs. In addition, some students who reside in the City are expected to attend a recently constructed school in northern San Jose.¹²⁹

The Project site is within the service areas for Central Park Elementary School, Juan Cabrillo Middle School, and Santa Clara High School.¹³⁰ Table 3-26 displays enrollment information for these three schools for the 2018–2019 school year, the most recent data available.

Table 3-26. Public Schools Serving the Project Area

School	2018–2019 School Year Enrollment
Central Park Elementary School	399
Juan Cabrillo Middle School	908
Santa Clara High School	1,967
Source: California Department of Education, 2019. ¹³¹	

Parks

The Santa Clara Parks and Recreation Department (Department) provides park and recreational services in the City. The Department is responsible for maintaining and programming the various parks and recreational facilities and works cooperatively with public agencies in coordinating all recreational activities within the City. Overall, as of June 2020, the Department maintains and operates Central Park, a 45.04-acre community park (45.04 acres improved and 34.93 acres unimproved at Central Park North, resulting in 79.97 acres); 27 neighborhood parks (121.261 acres improved and 9.389 acres unimproved, resulting in 130.65 acres); 13 mini parks (2.59 acres improved and 3.189 acres unimproved, resulting in 5.779 acres); public open space (16.13 acres improved and 40.08 acres unimproved, resulting in 56.21 acres); recreational facilities (14.86 acres improved, 9.038 acres unimproved, excluding the Santa Clara Golf and Tennis Club/BMX track, resulting in 23.898 acres); recreational trails (7.59 acres improved and 0.20 acre unimproved, resulting in 7.79 acres); and joint-use facilities (47.52 acres improved and 1.068 acres unimproved, resulting in 48.588 acres) throughout the City, totaling approximately 254,991 improved acres. Community parks are over 15 acres, neighborhood parks are 1 to 15 acres, and mini parks are typically less than 1 acre in size.

¹²⁸ Blackboard, Inc. 2020. *Santa Clara Unified School District: Schools Directory*. Available: <https://ca49000000.schoolwires.net/site/Default.aspx?PageType=1&SiteID=8&ChannelID=44&DirectoryType=6>. Accessed: January 6, 2020.

¹²⁹ City of Santa Clara. 2014. *City of Santa Clara General Plan Land Use Component and Housing Element Updates: EIR Addendum*. Available: <https://www.santaclaraca.gov/home/showdocument?id=46446>. Accessed: January 6, 2020.

¹³⁰ My School Locator. n.d. *Santa Clara Unified School District*. Available: <https://locator.decisioninsite.com/?StudyID=203915>. Accessed: January 6, 2020.

¹³¹ California Department of Education. 2019. *DataQuest*. Available: <https://www.cde.ca.gov/ds/sd/cb/dataquest.asp>. Accessed: January 16, 2019.

The closest recreational facilities to the Project site are the athletic fields at Monticello Academy and San Jose Art Academy, which contains school athletic fields and is 0.21 mile to the west, although this facility is not managed by the Parks and Recreation Department. The closest City park to the Project site is Homeridge Park, which contains athletic facilities, a picnic area, and a playground and is 0.60 mile south of the Project site.

Other Public Facilities

The City offers additional public services and facilities, including three library branches and a bookmobile, a gymnastics center, a bicycle track, a dog park, a senior center, a teen center, a youth activity center, a skate park, an auditorium, a community garden, and a community recreation center, which is the hub of the City's recreation programs. Other public facilities within 1 mile of the Project site are described below in Table 3-27. Central Park Library, the nearest library to the Project area, is the largest of the three libraries in the Santa Clara City Library system; it was expanded in 2004 to support more than 3,000 visitors per day. The General Plan identifies Central Park Library as a key resource that can continue to serve expected development in the southern portion of the city, including the Project area.^{132,133} In addition, the City's Northside Branch Library was opened in 2014; it serves the northern portion of the city.

Table 3-27. Other Public Facilities within 1 Mile of the Project

Facility	Address	Distance from Project Site (miles)
Central Park Library (located within Central Park)	2635 Homestead Road	0.50
Community Recreation Center (located within Central Park)	969 Kiely Boulevard	0.60
Santa Clara City Library. n.d. <i>About the Library</i> . Available: https://www.sclibrary.org/about-us/page-placeholder/library/about-the-library . Accessed: January 6, 2020.		
City of Santa Clara. n.d. <i>Parks & Recreation</i> . Available: https://www.santaclaraca.gov/our-city/departments-g-z/parks-recreation . Accessed: January 6, 2020.		

Discussion

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

Fire protection? (Less than Significant)

Although the addition of 183 new residential units to the Project area would slightly increase the need for fire protection services, the residential units would be constructed in an area that is already served by the SCFD. The Project would be within 0.5 mile of two different fire stations (Fire Station 3 and

¹³² Santa Clara City Library. n.d. *About the Library*. Available: <https://www.sclibrary.org/about-us/page-placeholder/library/about-the-library>. Accessed: January 6, 2020.

¹³³ City of Santa Clara. n.d. *Parks & Recreation*. Available: <https://www.santaclaraca.gov/our-city/departments-g-z/parks-recreation>. Accessed: January 6, 2020.

Fire Station 7). Therefore, response times to the Project site or the surrounding service areas are not expected to substantially change with Project implementation. The impacts would be ***less than significant***.

Police protection? (Less than Significant)

The 2018 average SCPD response time of 4 minutes and 26 seconds exceeds the police response time identified in the General Plan (3 minutes or less).^{134, 135} However, the 2014 Land Use and Housing Element updates to the General Plan note that, although planned housing would incrementally increase demands for police services, planned housing development itself would not directly result in adverse physical impacts associated with the construction of new public service facilities because new officers could be housed in existing police facilities, and no new construction would be required. On this basis, the General Plan EIR found that implementation of the General Plan would have a less than significant impact on police protection services and facilities. The Project would be consistent with the land use assumed for the site in the General Plan. Therefore, the Project's potential impact on police protection services was already disclosed in the General Plan EIR, and no further analysis is necessary. Thus, the Project's impacts on police protection would be ***less than significant***.

Schools? (Less than Significant)

The SCUSD has a student generation rate of 0.20 student per housing unit in the district.¹³⁶ As described in greater detail in Chapter 2, *Project Description*, the Project would result in 183 new housing units in the district service area, which would generate a total of up to approximately 40 new students across Central Park Elementary School, Juan Cabrillo Middle School, and Santa Clara High School.¹³⁷ However, this is considered a conservative estimate because most of the new residential units would be studio and one-bedroom apartments, which would be less likely to generate students. Furthermore, in addition to the schools currently open and operating, the SCUSD has four school sites that are currently closed but may open to support future school needs. In addition, some students who reside in the City would attend a newly constructed school in northern San Jose.^{138, 139}

Senate Bill 50 requires residential developers to pay a School Facilities Mitigation Fee to mitigate potential impacts that proposed developments may have on school districts and facilities. These fees support facility maintenance to offset potential additional use or other associated impacts.¹⁴⁰ For

¹³⁴ City of Santa Clara. n.d. *Parks & Recreation*. Available: <https://www.santaclaraca.gov/our-city/departments-g-z/parks-recreation>. Accessed: January 6, 2020.

¹³⁵ Ibid.

¹³⁶ Circlepoint. 2017. *Proposed Mitigated Negative Declaration and Initial Study for the 3023 Homestead Road Subdivision Project*. Prepared for the City of Santa Clara.

¹³⁷ Because 185 of the 183 new units would be either studio or one-bedroom units, this is considered a highly conservative estimate of the number of new SCUSD students that would be generated by the Project. As described in Chapter 2, *Project Description*, 40 of the 183 new units would be two-bedroom units. Based on an analysis of only two-bedroom units, the Project would generate approximately eight new SCUSD students.

¹³⁸ Blackboard, Inc. 2020. *Santa Clara Unified School District: Schools Directory*. Available: <https://ca49000000.schoolwires.net/site/Default.aspx?PageType=1&SiteID=8&ChannelID=44&DirectoryType=6>. Accessed: January 6, 2020.

¹³⁹ City of Santa Clara. 2014. *City of Santa Clara General Plan Land Use Component and Housing Element Updates: EIR Addendum*. Available: <https://www.santaclaraca.gov/home/showdocument?id=46446>. Accessed: January 6, 2020.

¹⁴⁰ State of California. 1998. *School Facilities Bond Act*. Available: http://www.leginfo.ca.gov/pub/97-98/bill/sen/sb_0001-0050/sb_50_cfa_19980715_154314_sen_floor.html. Accessed: January 7, 2020.

these reasons, it is not expected that the Project would generate students such that new facilities would be required, and the Project's impacts on schools would be ***less than significant***.

Parks? (Less than Significant)

Santa Clara City Code Chapter 17.35 requires new residential developments to provide developed park and recreational land and/or pay a fee in-lieu thereof, at the discretion of the City, pursuant to the State of California Quimby Act (Quimby) and/or the Mitigation Fee Act (MFA). The City is meeting the standard of 3 acres per 1,000 residents per the Quimby provisions of the City Code and 2.60 acres per 1,000 residents per the MFA provisions of the City Code.¹⁴¹ The Project would be required to pay a fee in-lieu of parkland dedication to offset the impacts of housing development on existing parkland and recreational facilities.

In total, the Project would provide approximately 254,177 sf of open space. Specifically, the Project would provide approximately 63,667 sf of active recreational amenities in the form of a pool, courtyards, lounge areas, gardens, an outdoor fitness area, a children's playground, bocce court, mini golf putting green, roof deck, dog run, and quiet seating area. Because the developer would be required to comply with Chapter 17.35 of the Santa Clara City Code, by dedicating the required acreage of parkland and paying the in-lieu fee, Project impacts on parks would be ***less than significant***.

Other public facilities? (Less than Significant)

The Project would result in the addition of approximately four permanent employees and 496 residents to the Project area. It is assumed that some of these residents would use other municipal public facilities such as libraries and community centers, which would slightly alter service ratios (e.g., decrease the number of volumes at the library per City resident) from existing conditions. The General Plan identifies Homestead Road, the road on which the Project site is located, as being located within an area where the Central Park Library (expanded in 2004) can continue to provide adequate service.¹⁴² In addition, because the City's Northside Branch Library was opened in 2014, the northern portion of the City is no longer served primarily by Central Park Library, which improves Central Park Library's service ratios. Therefore, Project-related impacts on other public facilities would be ***less than significant***.

¹⁴¹ State of California. 2015. Assembly Bill Number 1191 - State of California Quimby Act (Quimby) and/or the Mitigation Fee Act (MFA).

¹⁴² State of California. 1998. *School Facilities Bond Act*. Available: http://www.leginfo.ca.gov/pub/97-98/bill/sen/sb_0001-0050/sb_50_cfa_19980715_154314_sen_floor.html. Accessed: January 7, 2020.

XVI. Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

The Department provides parks and recreational services in the City. The department is responsible for maintaining and programming the various parks and recreational facilities and works cooperatively with public agencies in coordinating all recreational activities within the City. As described in Section XV, *Public Services*, overall, as of June 2020, the Department maintains and operates Central Park, a 45.04-acre community park; 27 neighborhood parks; 13 mini parks; public open space; recreational facilities; recreational trails; and joint-use facilities throughout the City, totaling approximately 254,991 improved acres. Community parks are more than 15 acres, neighborhood parks are 1 to 15 acres, and mini parks are typically less than 1 acre in size.

Santa Clara City Code Chapter 17.35 requires new residential developments to provide developed park and recreational land and/or pay a fee in-lieu thereof, at the discretion of the City, pursuant to the Quimby provisions and/or the MFA. The City is meeting the standard of 3 acres per 1,000 residents per the Quimby provisions of the City Code and 2.60 acres per 1,000 residents per the MFA provisions of the City Code.

Discussion

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (Less than Significant)

The Project would result in an additional 496 residents and four employees at the Project site. It is expected that some of these residents would use the nearby park and recreational facilities. If use of these parks increases to the extent that the facilities experience degradation or physical deterioration, impacts would be significant. In total, the Project would provide approximately 254,177 sf of open space. Specifically, the Project would provide approximately 63,667 sf of active recreational amenity areas for both new and existing residents, including a pool, courtyards, lounge areas, gardens, an outdoor fitness area, a children's playground, bocce court, a mini golf putting green, roof deck, dog run, garden, and quiet seating area. It is expected that many residents would use the onsite open space areas for recreational purposes, which would minimize potential Project-related effects on park facility service ratios. In addition, the Project Sponsor would be required to comply with Chapter 17.35 of the Santa Clara City Code by paying a fee in-lieu of parkland dedication to help offset the impacts of housing development on existing parkland and recreational facilities. The Project would meet this requirement by paying an in-

lieu fee and dedicating approximately 1 acre of parkland. Through compliance with Chapter 17.35 of the Santa Clara City Code, the Project Sponsor would ensure that adequate parkland-to-resident ratios would be maintained in the city, which would minimize the potential for substantial park facility deterioration resulting from the increased population at the Project site. Therefore, impacts would be ***less than significant***.

b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? (Less than Significant)

Santa Clara City Code Chapter 17.35 requires new residential developments to provide developed park and recreational land and/or pay a fee in-lieu thereof, at the discretion of the City, pursuant to the Quimby provisions and/or the MFA. As described in Chapter 2, *Project Description*, the Project would include onsite open space facilities, which would serve as recreational areas for many current and future residents at the Project site. In addition, the Project Sponsor would be required to comply with Chapter 17.35 of the Santa Clara City Code through an in-lieu fee payment and dedication of approximately 1 acre of parkland. As described in the various sections of this document, these onsite recreational areas would not result in significant impacts. Any future recreational facilities constructed with developer-provided in-lieu fee payments would be subject to their own environmental review at a later date. Therefore, the Project would have a ***less than significant*** impact related to the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

XVII. Transportation

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

Setting

The Project site is located at 3131 Homestead Road, on the roadway segment between Pomeroy Avenue and Kiely Boulevard. Homestead Road is a four-lane, east-west arterial that extends from the Foothill Expressway to the west to Santa Clara University to the east. According to the General Plan, the segment of Homestead Road between Pomeroy Avenue and Kiely Boulevard has an existing average daily traffic (ADT) volume of 20,610 vehicles. In 2035, it is projected to have an ADT volume of 23,390 vehicles.

Bicycle and pedestrian facilities near the Project site include local sidewalks, crosswalks, and Class II and Class III bike lanes.¹⁴³ Homestead Road has sidewalks and bike lanes on both sides of the street, and crosswalks are located at all signalized intersections. Transit facilities near the Project site include Caltrain commuter rail services; Santa Clara Station is approximately 2.8 miles to the northeast, and Lawrence Station is approximately 2.2 miles to the north. Within the Project vicinity, VTA offers the 53 and 57 local bus routes on Homestead Road and Kiely Boulevard. The 53 bus route runs east and west along Homestead Road. The closest 53 bus route stop serving the Project site is less than 0.1 mile to the southeast.¹⁴⁴ The 57 bus route also serves the Project site and travels north and south along Kiely Boulevard. The closest stop to the Project site is at the intersection of Kiely Boulevard and Homestead Road, approximately 0.4 mile east of the Project site.^{145,146}

Project Trip Generation

A trip generation analysis was conducted for the Project, which is proposing to construct 183 additional residential units. The analysis found that the new residential units would generate 81 AM Peak-Hour trips

¹⁴³ Silicon Valley Bicycle Coalition. n.d. *Santa Clara Map*. Available: <https://www.santaclaraca.gov/home/showdocument?id=1326>. Accessed: January 25, 2019.

¹⁴⁴ SF Bay Transit. 2020. *53 Bus Map*. Available: <https://sfbaytransit.org/vta/route/53-saratoga-sunnyvale/map>. Accessed: January 24, 2020.

¹⁴⁵ Valley Transportation Authority. 2019. *VTA's New Service System Map (Bus and Rail) and South County Map*. Available: <https://www.vta.org/sites/default/files/2019-11/VTA%20Transit%20Map.pdf>. Accessed: January 24, 2020.

¹⁴⁶ Moovit. 2020. *57*. Available: https://moovitapp.com/index/en/public_transit-line-57-SF_Bay_Area_CA-22-224-500373-0. Accessed: January 24, 2020.

and 99 PM Peak-Hour trips. The existing residential units are estimated to be generating 19 AM Peak-Hour trips and 24 PM Peak-Hour trips. Thus, the net increase compared to existing conditions would be 62 AM Peak-Hour trips and 75 PM Peak-Hour trips. Because the Project would not generate more than 100 new Peak-Hour trips, a Transportation Impact Analysis was not required.¹⁴⁷

Discussion

a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? (Less than Significant)

The VTA Transportation Impact Analysis Guidelines (updated October 2014) require an evaluation of transportation impacts where a project is projected to generate 100 or more net new weekday AM or PM Peak-Hour trips and an analysis of major intersections where a project is projected to increase traffic volumes by 10 or more vehicle trips per lane during either the AM or PM Peak Hour. As described above, given that the Project would generate a net increase of approximately 62 vehicle trips during the AM Peak Hour and approximately 75 vehicle trips during the PM Peak Hour, the Project would have a minimal impact on surrounding major intersections and roads. Therefore, the Project would not contribute 10 or more vehicle trips per lane during either the AM or PM Peak Hour.

Construction activities would require additional vehicles for hauling materials and equipment to and from the Project site, but these potential transportation-related impacts would be temporary in nature and limited to associated construction activities. Given that the Project would result in a negligible increase in daily vehicle trips, transportation-related Project impacts would be ***less than significant***.

b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? (Less than Significant)

The Project site is within a “suburban area zone” with many local and regional transit facilities available. On a regional level, Caltrain’s Santa Clara Station is approximately 2.8 miles to the northeast, and Lawrence Station is approximately 2.2 miles to the north. Within the Project vicinity, VTA offers the 53 and 57 local bus routes within 0.4 mile of the Project site. In addition, because the number of trips that would be added by the Project would be minimal, and because of the in-fill nature of the Project, it is anticipated that the Project would not substantially increase VMT.

On June 23, 2020, the Santa Clara City Council adopted a Transportation Analysis Policy, establishing VMT as the methodology for analyzing transportation environmental impacts and establishing the baseline, threshold, and exemptions for environmental review. Under this policy, “transit supportive projects” are exempt from VMT analysis. A project qualifies as a “transit supportive project” if it is located within ½ mile of an existing major transit stop or an existing transit stop along a high-quality transit corridor and, for residential projects, has a density of at least 35 dwelling units per acre. Given the proximity of the 53 and 57 bus routes, and the density of 36 dwelling units per acre, the Project qualifies as a “transit supportive project” and is therefore presumed to have a less than significant VMT impact.

Because the Project would be located on a high-quality transit corridor and within 0.4 mile of existing major transit stops and substantial additional VMT would not be added, the Project would not conflict with CEQA Guidelines Section 15064.3, subdivision (b). The Project would result in a ***less than significant*** impact.

¹⁴⁷ Hexagon Transportation Consultants, Inc. 2019. *Trip Generation Analysis for the Proposed Project Located at 3131 Homestead Road in Santa Clara, California*. July 22.

c. Substantially increase hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Less than Significant)

The Project proposes to demolish three of the two-story apartment buildings and a portion of an additional two-story apartment building, a one-story clubhouse and boiler room, and four carport structures on the site. In the place of these demolished buildings, a single three- and four-story apartment building with 225 new dwelling units would be constructed. This proposed building would be setback 20 feet from Homestead Road. Vehicle ingress and egress would be provided from the four existing driveways on Homestead Road and Quince Avenue. Three driveways are on the southern perimeter of the Project site, on Homestead Road, and one driveway is on the western perimeter of the Project site, on Quince Avenue. The driveways on the southern perimeter of the Project site would serve as the main entries to the site for passenger and service vehicles. One 26-foot-wide road on the eastern perimeter would be accessible via Homestead Road and a 25-foot-wide road on the western perimeter would be accessible via Quince Avenue for fire access and general circulation; both roads are part of the existing site. The Project would not substantially change vehicle access to the site. All driveways would be designed in conformance with standard safety practices and would not affect bicyclist, pedestrian, or traffic operations. Therefore, the design features of these new additions to the Project site would not include hazardous designs or incompatible uses, and the impact would be **less than significant**.

d. Result in inadequate emergency access? (No Impact)

The Project would not change the existing roadway system. The site would be easily accessible to emergency vehicles. No internal site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. Vehicle ingress and egress would be provided via the four existing driveways on Homestead Road and Quince Avenue. One 26-foot-wide road on the eastern perimeter would be accessible via Homestead Road and a 25-foot-wide road on the western perimeter would be accessible via Quince Avenue for fire access and general circulation; both roads are part of the existing site. Therefore, there would be **no impact** on emergency access.

XVIII. Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as 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:				
a. Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Setting

A description of the natural environment of the Santa Clara Valley, including the prehistoric context, is provided in Section V, *Cultural Resources*.

Ethnographic Context

The Project site is in the homeland of the Ohlone Native American tribe. The territory of the Ohlone people extended along the coast from the Golden Gate to just below Carmel and as far inland as 60 miles, encompassing several inland valleys. The Ohlone were hunter-gatherers who relied heavily on acorns as well as shellfish and sea fish. They also used a wide range of other foods, including various seeds, buckeye, berries, roots, land and sea mammals, waterfowl, reptiles, and insects. Prior to contact, the Ohlone were politically organized by tribelet, consisting of one or more villages or camps within a territory, as designated by physiographic features. Each tribelet had a chief whose duties included providing for visitors, overseeing ceremonial activities, and directing fishing, hunting, gathering, and warfare expeditions. The chief served as the leader of a council of elders that functioned primarily in an advisory capacity to the community.¹⁴⁸

Seven Spanish missions were founded in Ohlone territory between 1776 and 1797. While living within the mission system, the Ohlone commingled with other groups, including the Esselen, Yokuts, Miwok, and Patwin. Mission life was devastating to the Ohlone population.¹⁴⁹ It has been estimated that the Ohlone population numbered around 10,000 in 1776 when the first mission was established in their territory. By

¹⁴⁸ Levy, R. 1978. Costanoan. In *California*, R.F. Heizer, ed., pp. 485–495. Handbook of North American Indians. Volume 8. Washington, D.C.: Smithsonian Institution.

¹⁴⁹ Milliken, R. 1995. A Time of Little Choice: The Disintegration of the Tribal Culture in the San Francisco Bay Area, 1769–1810. In *Anthropological Papers* 43, series editor Thomas C. Blackburn. Novato, CA: Ballena Press.

1832, the Ohlone population was less than 2,000 as a result of disease, harsh living conditions, and reduced birth rates.^{150,151}

Native American Correspondence

AB 52 (Chapter 532, Statutes of 2014) establishes a formal consultation process for California Native American tribes as part of CEQA and equates significant impacts on tribal cultural resources with significant environmental impacts (new Public Resources Code Section 21084.2). A tribal cultural resource is a site, feature, place, cultural landscape, sacred place, or object that is considered to have cultural value to a California Native American tribe and 1) is listed in the California Register of Historical Resources or a local historic register, 2) eligible for listing in the California Register of Historical Resources or a local historic register, or 3) determined by the lead agency to be a resource that meets register criteria.

The NAHC was contacted on January 10, 2020, during outreach required by AB 52. Both a search of the NAHC SLF as well as a list of California Native American tribes that have traditional cultural affiliation with the region were requested. The NAHC responded with a positive SLF finding and a list of the following seven California Native American tribal representatives on January 15, 2020:

- Charlene Nijmeh, chairperson – Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- Monica Arellano, vice chairperson – Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- Andrew Galvan – Ohlone Indian Tribe
- Valentin Lopez, chairperson – Amah Mutsun Tribal Band
- Katherine Perez, chairperson – North Valley Yokuts Tribe
- Ann Marie Sayers, chairperson – Indian Canyon Mutsun Band of Costanoan
- Irenne Zwierlein, chairperson – Amah Mutsun Tribal Band of Mission San Juan Bautista

The NAHC listed the Muwekma Ohlone Indian Tribe of the San Francisco Bay Area and the Ohlone Indian Tribe as having additional knowledge regarding the sacred lands identified in the vicinity of the Project site. Telephone calls were made to Chairperson Charlene Nijmeh and Monica Arellano of the Muwekma Ohlone Indian Tribe of the San Francisco Bay Area and Andrew Galvan of the Ohlone Indian Tribe on January 21, 2020. At that time, the individuals could not be reached. Voicemail messages were left for both Mr. Galvan and Chairperson Nijmeh; however, no option was available for leaving a message for Ms. Arellano. An additional request for follow up was sent via email to reach the three representatives on February 5th, 2020.

Initial AB 52 outreach to each of the seven individuals listed above was conducted on January 21, 2020. This outreach consisted of letters that provided Project information, a map of the Project location, and a request to consult on the Project. ICF also followed up with each of the individuals listed by the NAHC on February 5th, 2020. Of the seven tribal representatives contacted, three were reached and had responses. However, none of the respondents identified specific tribal cultural resources or tribal resource concerns in the Project vicinity. The responses are briefly summarized below.

¹⁵⁰ Cook, S.F. 1943. The Conflict between the California Indians and White Civilization, I: The Indian Versus the Spanish Mission. In *Ibero-Americana* 21. Berkeley, CA.

¹⁵¹ Levy, R. 1978. Costanoan. In *California*, R.F. Heizer, ed., pp. 485–495. Handbook of North American Indians. Volume 8. Washington, D.C.: Smithsonian Institution.

Chairperson Valentine Lopez, of the Amah Mutsun Tribal Band, said that the Project site was not located within traditional tribal lands. Chairperson Irenne Zwierlein, of the Amah Mutsun Tribal Band of Mission San Juan Bautista, requested that sensitivity training be given to all personnel conducting ground disturbing work. Chairperson Ann Marie Sayers, of the Indian Canyon Mutsun Band of Costanoan, requested that a Native American monitor and an archaeological monitor must be on site during all earth movement. Section V, *Cultural Resources*, includes mitigation measures (M-CUL-1 and M-CUL-2) that will require sensitivity training and archaeological and Native American monitoring during construction.

Discussion

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

a. Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k)? (Less than Significant with Mitigation)

and

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? (Less than Significant with Mitigation)

As discussed in Section V, *Cultural Resources*, a records search conducted at the NWIC in January 2020 did not identify any prehistoric archaeological resources within the Project site or within 0.25 mile of the Project site. However, the proximity of the Project site to both fresh water and San Francisco Bay indicates increased potential for as-yet undocumented prehistoric archaeological resources. Such resources have the potential to also be considered tribal cultural resources. In addition, sensitive Native American areas were identified in the vicinity of the Project site during consultation with the NAHC. As stated above under *Native American Correspondence*, the tribal representatives identified by the NAHC as having additional information regarding the nature of the sensitive areas were contacted by phone and email on January 21, 2020. Follow-up emails were sent on February 5, 2020. Of the seven individuals who were sent an email, three were reached and provided comments – and their comments are described above. There have been no responses to date from the remaining four individuals.

Although no prehistoric archaeological resources were identified during the literature review, the Project site's proximity to fresh water and San Francisco Bay, as well as the positive finding of the SLF search, indicates increased potential for buried archaeological resources that could be considered tribal cultural resources. Project-related construction activities could disturb sediments with the potential to contain buried tribal cultural resources. Exposure or destruction of tribal cultural resources would result in a significant impact. Implementation of Mitigation Measures M-CUL-1, M-CUL-2, and M-CUL-3, as outlined in Section V, *Cultural Resources*, would provide archaeological sensitivity training, a protocol for unanticipated discoveries during construction, and archaeological and Native American monitoring to ensure early identification of tribal or archaeological material during construction, and outline protocols for further research and reporting should any resources be encountered during construction, thereby minimizing potential impacts. Therefore, the Project's impact on tribal cultural resources would be ***less than significant with mitigation***.

XIX. Utilities and Service Systems

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

Setting

Water

The City owns and operates 27 groundwater wells (of which 24 are active) and six storage tanks; the remainder of Santa Clara's treated water supply is purchased from the SCVWD and the San Francisco Public Utilities Commission (SFPUC). Water is supplied by a mix of four primary sources, described in detail below.

Local Runoff

The SCVWD operates eight local reservoirs with a combined capacity of 155,000 acre-feet (af). One af equals approximately 326,000 gallons, the average amount of water used by two families of five in one year. These reservoirs collect local runoff during the winter storms for later release to percolation ponds. From these ponds, water percolates and recharges the underground aquifers.

Imported Water

Roughly 50 percent of the valley's water supply is imported water via the Sacramento–San Joaquin River Delta or delivered by the California Department of Water Resources' State Water Project (SWP) and the U.S. Bureau of Reclamation's Central Valley Project (CVP). The SCVWD has a SWP contract for 100,000 af per year (afy). The SCVWD's CVP contract is for 152,500 afy, of which 130,000 af is for municipal and

industrial needs and 22,500 af is for agricultural needs. The SFPUC also provides imported water from the Tuolumne River watershed directly to several county retailers, including the City.

Groundwater

The City owns and operates 27 wells (of which 24 are active) that provide approximately 62 percent of the City's water supply through groundwater.

Recycled Water

Tertiary treated (or "recycled") water serves as the fourth source of valley water and comprises approximately 10 percent of Santa Clara's overall water supply. This water is supplied by the San Jose-Santa Clara Regional Wastewater Facility (RWF), which is an advanced tertiary treatment facility. Its primary use is for irrigation at large turf areas, such as golf courses, parks, and schools. Several Santa Clara industries also use recycled water for industrial process water, for cooling towers, or for toilet flushing in dual-plumbed buildings.

Wastewater

The City's wastewater collection system includes approximately 270 miles of sewer pipelines, ranging from 4 to 48 inches in diameter, and six sewage pump stations. In addition to conveying Santa Clara's wastewater flows to the RWF, the City must provide conveyance capacity for the City of Cupertino because of a contractual agreement entered into when the City purchased an existing sewer trunk line from the Cupertino Sanitation District several years ago. Based on hydraulic modeling of the system, several sewer mains and collector lines are at or near capacity. The collection system conveys wastewater to the RWF, located north of State Route 237 in San Jose. Santa Clara's current average dry-weather flow is 13.3 million gallons per day (mgd), based on 2009 data, while the treatment capacity is 22.585 mgd.

Solid Waste

Solid waste collection in Santa Clara is provided by Mission Trail Waste System (Mission Trail) through a contract with the City. Mission Trail also has a contract to implement the Clean Green portion of the City's recycling plan by collecting yard waste. The City has an arrangement with the owners of the Newby Island Landfill, located in San Jose, to provide disposal capacity for the City through 2024. Recycling services are provided through Stevens Creek Disposal and Recycling.

Electric Power, Natural Gas, and Telecommunications Facilities

Although PG&E provides electrical services to most of Northern California, the City distributes its own electricity to residents through its own electrical utility, SVP, which obtains energy from varied sources throughout California, Nevada, Oregon, and Washington; 25.5 percent of all energy generated for sales in 2018 was generated by City-owned electricity generation facilities. SVP manages approximately 55.5 miles of electric transmission lines and approximately 538.6 miles of underground and aboveground electric distribution lines citywide.¹⁵² In total, SVP customers in Santa Clara used approximately 3.57 billion kilowatt hours of electricity in 2018, 90.6 percent of which was used for industrial purposes.¹⁵³ By

¹⁵² Silicon Valley Power. 2018. *Utility Fact Sheet*. City of Santa Clara, January–December 2018. Available: <http://www.siliconvalleypower.com/svp-and-community/about-svp/utility-fact-sheet>. Accessed: January 31, 2020.

¹⁵³ Ibid.

2020, SVP intends to obtain approximately one-third of all available electricity resources to the City from renewable sources.¹⁵⁴ Within City limits, PG&E provides only natural gas services.^{155,156}

Santa Clara is serviced by numerous telecommunications companies (AT&T, Verizon, Sonic, Comcast, and additional local providers) that provide internet services citywide, including high-speed fiber optic services.¹⁵⁷ Santa Clara is within the AT&T service area for landline telecommunications; the Project site is serviced by both AT&T and Comcast for internet and phone telecommunication services.¹⁵⁸ In addition, the City provides free WiFi internet access citywide, which is generally accessible from all public places, including outdoor areas. SVP manages free public WiFi capabilities through a metering network called SVP MeterConnect.¹⁵⁹

Discussion

- a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less than Significant)***

Water Facilities

The existing and new residential uses for the Project site would be served by an onsite water distribution system that would be connected to the City water mains located in Homestead Road, Quince Avenue, and Miles Drive. The Project shall provide four new water connections to the City mains located on Homestead Road, Quince Avenue, and Miles Drive and provide new private water mains along the northern perimeter of the Project site to serve buildings on the northern side of the complex. The existing 8-inch water main shall become a private fire main. Therefore, the existing water lines located throughout the Project site that currently serve existing residents would remain, and no new water facilities would need to be constructed. Thus, the impact would be ***less than significant***.

Wastewater Facilities

New sanitary sewer lines for the proposed apartment building would range from 6 to 8 inches and be located around the perimeter of the building. These new sanitary sewer lines would ultimately connect via laterals to the existing 18-inch sanitary sewer main in Homestead Road. The sewer laterals servicing existing residential uses, which would remain, would continue to use the same existing 18-inch sanitary sewer main in Homestead Road.

¹⁵⁴ City of Santa Clara. 2014. *City of Santa Clara 2010–2035 General Plan*. December 9, 2014. Available: <http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan>. Accessed: October 18, 2019.

¹⁵⁵ Ibid.

¹⁵⁶ PG&E. 2019. *Economic Development Site Tool*. Available: https://www.pge.com/en_US/large-business/services/economic-development/opportunities/sitetool.page. Accessed: August 5, 2019.

¹⁵⁷ GeoISP. 2016. *Broadband Internet in Santa Clara, California*. Available: <https://geoisp.com/us/CA/santa-clara/>. Accessed: January 27, 2020.

¹⁵⁸ AT&T. 2010. *2010 Statewide Telephone Boundary Map: Telephone Exchange Areas of California*. Available: <https://www.cpuc.ca.gov/boundarymaps/>. Accessed: January 27, 2020.

¹⁵⁹ Santa Clara Free WiFi. 2012. *About Us: Santa Clara Free WiFi*. Available: <http://santaclarafreewifi.com/about.html>. Accessed: January 27, 2020.

Wastewater from the Project would be treated at the RWF, which is managed and operated by San Jose's Environmental Services Department. The RWF has the capacity to treat 167 mgd of liquid waste; once treated, the effluent is discharged to San Francisco Bay, with a portion delivered to the South Bay Water Recycling (SBWR) Project.¹⁶⁰ The RWF's permit to treat and discharge wastewater into San Francisco Bay is regulated by NPDES, as administered by the USEPA. In the most recent reporting period (2014), the plant treated an average of 108 mgd. Given that the RWF has a treatment capacity of 167 mgd, as of 2014, an additional capacity of 59 mgd remains.¹⁶¹ The average residential flow for multi-family dwellings in Santa Clara is estimated at 149 gallons per day (gpd).¹⁶² The projected increase in wastewater flows from the Project site with the proposed net addition of 183 units would be approximately 27,267 gpd. This would constitute less than 0.05 percent of the RWF's unused capacity.¹⁶³ Therefore, the existing RWF would be able to accommodate increased flows associated with the Project. In addition, according to the City's Sanitary Sewer Capacity Assessment for the General Plan update (2009), no sewer improvements would be necessary to meet increased sewer conveyance needs between 2015 and 2025. As such, the impact would be *less than significant*.

Stormwater

The Project would increase the impervious surface area from approximately 342,700 sf to approximately 388,200 sf. An increase in the amount of impervious surface areas on the Project site would result in more stormwater being discharged compared to existing conditions. However, new stormwater drains and catchment basins would be placed around the perimeter and throughout the Project site. Stormwater collected from new storm drainage lines in the northern portion of the Project site would discharge to an existing 6-inch storm drain in the northern perimeter road via a new storm drainage lateral. Stormwater collected from the southern portion of the Project site would ultimately discharge via a new stormwater lateral to an existing 24-inch storm drain main line in Homestead Road. In addition, the Project would incorporate bio-retention areas as part of the Storm Water Quality Control Plan. The 20 bio-retention areas throughout the Project site would vary in size and include different types of treatment systems, such as bio-treatment ponds, flow-through planters, a combination of these two systems, and self-treating areas.

The Project would implement a variety of stormwater management measures to reduce water quality impacts related to stormwater runoff pursuant to applicable provisions of NPDES Permit No. CAS612008. Stormwater runoff generated on the Project site would be treated to the maximum extent feasible by implementing a mixture of LID BMPs as well as a media filtration system that complies with applicable provisions of Chapter 6 of the Santa Clara Valley Urban Runoff Pollution Prevention Program C.3 Handbook. Because of the stormwater management procedures and the bio-retention areas, the Project would have a *less than significant* impact on stormwater facilities.

¹⁶⁰ City of San Jose. n.d. *San José-Santa Clara Regional Wastewater Facility*. Available: <https://www.sanjoseca.gov/your-government/environment/water-utilities/regional-wastewater-facility>. Accessed: January 27, 2020.

¹⁶¹ 167 - 108 mgd = 59 mgd (average dry weather flow [ADWF] capacity - ADWF = remaining daily capacity).

¹⁶² City of San Jose. 2015. *Phase 3 Flow and Load Study Technical Memorandum No. 3*. February. Available: <https://www.sanjoseca.gov/Home/ShowDocument?id=39870>. Accessed: January 27, 2020.

¹⁶³ $27,267 \text{ gpd} \div 59,000,000 \text{ gpd} \times 100 = 0.0462 \text{ percent}$.

Electric Power, Natural Gas, and Telecommunications Facilities

The Project would connect to existing electrical and gas lines located around the perimeter of the Project site. The Project would connect via service laterals to the existing gas lines in Homestead Road and Quince Avenue. The existing overhead electrical system at Homestead Road would be used; the existing electrical lines along Quince Avenue would be used as well. In addition, the Project would include three separate electrical rooms connected to SVP utility transformers. The electrical rooms would be located near the northwestern, eastern, and southeastern portions of the Project site. Therefore, no new electric power or natural gas lines would need to be constructed.

The Project site is serviced by both AT&T and Comcast for internet and phone telecommunication services.¹⁶⁴ In addition, the City provides free WiFi internet access citywide, which is generally accessible from all public places, including outdoor areas. This WiFi would also be available from outdoor areas at the Project site. Therefore, no new telecommunications lines would need to be constructed.

For the reasons outlined above, the Project's need would be met by existing electric power, natural gas, and telecommunications facilities, and the impact on these facilities would be ***less than significant***.

b. Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years? (Less than Significant)

New development is projected to increase water demand within the city. The 2010 Urban Water Management Plan (UWMP) prepared by the SCVWD projected water demand in 2020 to decrease because of drought conditions and continued conservation efforts. According to the UWMP, the City set a goal for 2020 for per capita projected daily consumption to be 186 gallons per capita per day (gpcd).¹⁶⁵ Because the Project would add up to 496 new residents, this equates to an estimated 33,673,440 gallons of increased water demand annually.¹⁶⁶ According to the UWMP, the SCVWD would have sufficient supplies through the planning horizon year of 2040 during average rainfall years and sufficient supplies through 2035 during a single severe drought year. During multiple drought years, demand would exceed supply beginning in the second year of drought in every modeled three-year period from 2020 through 2040.

Overall, the City's water utility has determined that there are sufficient water supplies to provide service to the City through 2035 under normal and single critical dry-year scenarios. The Project would not require new entitlements. Therefore, the impact would be ***less than significant***.

c. Result in a determination by the wastewater treatment provider that serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments? (Less than Significant)

As noted in topic "a," above, wastewater from the Project would be treated at the San Jose-Santa Clara RWF. The wastewater treatment plant provides primary, secondary, and tertiary treatment of wastewater for four sanitation districts and eight cities in the region, including Santa Clara. The current treatment

¹⁶⁴ AT&T. 2010. *2010 Statewide Telephone Boundary Map: Telephone Exchange Areas of California*. Available: <https://www.cpuc.ca.gov/boundarymaps/>. Accessed: January 27, 2020.

¹⁶⁵ City of Santa Clara. 2011. *2010 Urban Water Management Plan*. May. Available: <https://www.santaclaraca.gov/home/showdocument?id=5314>. Accessed: January 27, 2020.

¹⁶⁶ (186 gallons/per capita/day) x (496 residents) = (92,256 gallons/day) x 365 days = 33,673,440 gallons/yr.

capacity of the plant is 167 mgd; it treats an average of 110 mgd.¹⁶⁷ According to the General Plan EIR, Santa Clara has a treatment capacity allocation of 22.585 mgd; its peak-week (5-day average) dry-weather flow in 2019 was 17.0 mgd.¹⁶⁸ With build-out of Phase 3 of the General Plan, the average dry-weather flow (ADWF) was projected to be 20.1 mgd, leaving 2.485 mgd of remaining capacity. The Project is consistent with the development assumptions in the General Plan, and the General Plan EIR concluded that implementation of the General Plan would have a ***less than significant*** impact on wastewater treatment capacity.

d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (Less than Significant)

The Newby Island Sanitary Landfill, as of 2014, had a remaining capacity of approximately 21.2 million cubic yards.¹⁶⁹ The City has an arrangement with the owners of the Newby Island Landfill to provide disposal capacity for the City through 2024, as well as other landfills located outside the County, according to the City's General Plan.^{170, 171} The Santa Clara County IWMP estimates there is adequate waste capacity through its planning horizon of 2024.¹⁷² According to General Plan EIR, the average person produces 6.9 pounds of solid waste per day. As such, the Project would produce up to a net increase of approximately 3,422.4 pounds of solid waste per day and approximately 1,249,176 pounds (624.6 tons) of solid waste per year.¹⁷³ The solid waste produced on the Project site would be a small amount of solid waste compared to Newby Island Landfill's daily permitted remaining capacity. Therefore, the Project would be served by a landfill with sufficient capacity to accommodate the Project's solid waste disposal needs. In addition, according to the City's General Plan EIR, a prerequisite for new residential development under Phase III (2025–2035) of the General Plan requires the City to identify adequate solid waste disposal sites after 2024. The City owns property outside its jurisdictional boundaries that could provide this service. Furthermore, Newby Island Landfill is currently in the process of seeking authorization from San Jose to expand the permitted capacity to accept an additional 15.1 million cubic yards of solid waste.¹⁷⁴ If the landfill is not available to accept waste, the City will prepare a contract with another landfill with capacity,

¹⁶⁷ City of San Jose. n.d. *San José-Santa Clara Regional Wastewater Facility*. Available: <https://www.sanjoseca.gov/your-government/environment/water-utilities/regional-wastewater-facility>. Accessed: January 27, 2020.

¹⁶⁸ San Jose/Santa Clara Treatment Plant Advisory Committee. 2020. *Special Meeting Agenda/TPAC*. February 13. Available: <https://www.sanjoseca.gov/Home/ShowDocument?id=52045>. Accessed: June 25, 2020.

¹⁶⁹ CalRecycle. 2019. *Newby Island Sanitary Landfill*. Available: <https://www2.calrecycle.ca.gov/SWFacilities/Directory/43-AN-0003/Detail>. Accessed: January 27, 2020.

¹⁷⁰ City of Santa Clara. 2010. *Resolution No. 10-7737*. Available: <https://www.santaclaraca.gov/home/showdocument?id=2744>. Accessed: June 25, 2020.

¹⁷¹ City of Santa Clara. 2014. *City of Santa Clara 2010–2035 General Plan*. December 9, 2014. Available: <http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan>. Accessed January 16, 2020.

¹⁷² City of Santa Clara. 2011. *City of Santa Clara Draft 2010–2035 General Plan: Integrated Final Environmental Impact Report*. January 2011.

¹⁷³ $(6.9 \text{ lbs/day}) \times (496 \text{ residents}) = (3,422.4 \text{ lbs/day}) \times 365 \text{ days} = 1,249,176 \text{ lbs/yr}$.

¹⁷⁴ Bauer, Ian. 2015. *San José Planners Delay Vote on Newby Island Landfill Expansion to February*. Available: http://www.mercurynews.com/milpitas/ci_27374273/san-jose-planners-delay-vote-newby-island-landfill. Accessed: June 25, 2020.

such as Guadalupe Mines in San Jose, which is anticipated to close in 2048.^{175, 176} Therefore, given that the General Plan anticipates 42,000 tons of solid waste and that the City would identify and provide an alternative landfill for waste disposal beyond 2024, if needed, the Project would be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste needs, and the impact would be ***less than significant***.

e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste? (No Impact)

The Project consists of adding intensified residential usage to the Project site. The additional residential units onsite would not result in the generation of unique types of solid waste that would conflict with existing regulations applicable to waste disposal. The Project would be required to comply with Santa Clara solid waste disposal requirements, as determined by Santa Clara County's Integrated Waste Management Plan (IWMP). The IWMP stipulates that each jurisdiction in the county has a diversion requirement of 50 percent for 2000 and each year thereafter until 2020, at which point the jurisdiction must meet a 75 percent diversion requirement. Santa Clara's diversion rate is based on a daily generation rate in terms of pounds per person per day. The target rate is equivalent to a 50 percent diversion, based on a jurisdiction's base year. With adherence to the IWMP, as well as recycling programs established under AB 939 and the Integrated Waste Management Act, the Project would comply with federal, State, and local statutes and regulations related to solid waste, and no related impact would occur. Thus, there would be ***no impact***.

¹⁷⁵ City of Santa Clara. 2011. *City of Santa Clara Draft 2010–2035 General Plan: Integrated Final Environmental Impact Report*. January 2011.

¹⁷⁶ CalRecycle. 2019. *Facility/Site Summary Details: Guadalupe Sanitary Landfill (43-AN-0015)*. Available: <https://www2.calrecycle.ca.gov/swfacilities/Directory/43-AN-0015/>. Accessed: June 25, 2020.

XX. Wildfire

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

Setting

The California Department of Forestry and Fire Protection (CAL FIRE) has designated Fire Hazard Severity Zones (FHSZs) statewide to help identify areas of moderate, high, and very high fire risk. Some FHSZs are designated as State Responsibility Areas (SRAs), in which CAL FIRE is responsible for wildland fire prevention and management. Other areas are designated as Local Responsibility Areas (LRAs), in which local fire departments are responsible for wildland fire prevention and management.¹⁷⁷ The 2018 California State Hazard Mitigation Plan states that Very High Fire Hazard Severity Zones are generally located in landscapes with numerous features known to elevate fire risk, such as steep slopes and a high density of dry vegetation.¹⁷⁸ Areas that experience wildfires also have an increased susceptibility to secondary affects after wildfires, such as landslides on steep, devegetated slopes. The Project site is approximately 4.5 miles northeast of the nearest Very High FHSZ in a Local Responsibility Area, and approximately 5.6 miles east of the nearest High Fire FHSZ in an SRA; there are no FHSZs in the City.¹⁷⁹

To prepare residents, agencies, and businesses for potential natural disaster hazards, including wildfire hazards, the City has adopted Santa Clara County's Operational Area Hazard Mitigation Plan into the City's Emergency Operations Plan. Santa Clara County's Operational Area Hazard Mitigation Plan notes that because most wildfire risk areas in Santa Clara County do not overlap with areas supporting large

¹⁷⁷ California Department of Forestry and Fire Protection. 2007. *Fire Hazard Severity Zones Maps*. Available: <https://osfm.fire.ca.gov/divisions/wildfire-prevention-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/>. Accessed: January 6, 2020.

¹⁷⁸ CalOES. 2018. *2018 California State Hazard Mitigation Plan*. Chapter 8 – Fire Hazards: Risks and Mitigation. Available: https://www.caloes.ca.gov/HazardMitigationSite/Documents/011-2018%20SHMP_FINAL_Ch%208.pdf. Accessed: January 6, 2020.

¹⁷⁹ California Department of Forestry and Fire Protection. 2018. *Fire and Resource Assessment Program (FRAP) Fire Hazard Severity Zone GIS Viewer*. Available: <https://egis.fire.ca.gov/FHSZ/>. Accessed: January 6, 2020.

populations, a wildfire would not be likely to extensively damage substantial infrastructure, either in unincorporated Santa Clara County or in incorporated cities within its boundaries.¹⁸⁰¹⁸¹ The City does not identify evacuation routes in the event of emergencies or natural disasters.

Discussion

a. *Substantially impair an adopted emergency response plan or emergency evacuation plan? (Less than Significant)*

Although the City does not have an adopted emergency evacuation plan, it has adopted Santa Clara County's Operational Hazard Mitigation Plan with a local Planning Partner Annex. Although the Project would be developed within an area that is currently developed for residential use, it would result in an increase in the number of individual residents at the Project site, which is susceptible to non-wildfire hazards, including seismic hazards. However, the changes that would result from Project implementation would not substantially impair the Operational Hazard Mitigation Plan, and thus impacts would be ***less than significant***.

b. *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks of, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (No Impact)*

The City does not support any Moderate, High, or Very High FHSZs in LRAs or SRAs. Although the Project would result in 183 additional residential dwelling units at the Project site, these units would not be located in an area susceptible to wildfire risks or associated hazards. Therefore, it is not expected that Project occupants would be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to Project implementation. Furthermore, the Project does not include any components that would exacerbate wildfire risks. Therefore, there would be ***no impact***.

c. *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment? (Less than Significant)*

The Project would not include the installation of any emergency maintenance infrastructure, including access roads for dedicated emergency use, emergency water sources, or fuel breaks. Although the Project would include the installation of four new water main connections and a new private main, as well as the conversion of an existing 8-inch water main to a private fire main, to serve additional domestic water needs, this would not be an emergency supply source. In addition, although the Project would include the installation of three onsite electrical rooms, the Project would connect to existing overhead electrical lines. Therefore, no additional electrical lines that could elevate fire risk would be installed as part of the Project, and impacts would be ***less than significant***.

¹⁸⁰ County of Santa Clara. 2017. *Santa Clara County Operational Hazard Mitigation Plan*. Volume 1 – Operational Area-wide Elements. Available: <https://www.santaclaraca.gov/home/showdocument?id=63770>. Accessed: January 6, 2020.

¹⁸¹ City of Santa Clara. 2017. *Santa Clara County Operational Hazard Mitigation Plan*. Volume 2 – Planning Partner Annexes. Available: <https://www.santaclaraca.gov/home/showdocument?id=63772>. Accessed: January 6, 2020.

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? (No Impact)

Because the nearest Very High FHSZ to the Project site is approximately 4.5 miles away, it is unlikely that Project structures would be exposed to downstream flooding or landslides resulting from post-fire slope instability or drainage changes. In addition, because the Project would include the installation of additional onsite vegetation and ground cover, onsite runoff would be reduced from current conditions. Therefore, there would be ***no impact***.

XXI. Mandatory Findings of Significance

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

Discussion

- a. Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? (Less than Significant with Mitigation)**

The Project site is in a developed area; it contains no valuable or sensitive habitats. Although trees on or near the site may provide habitat for nesting birds, Mitigation Measure M-BI-1, described above, would ensure that impacts on biological resources would be less than significant. The possibility exists for encountering buried cultural resources and paleontological resources during construction; however, Mitigation Measures M-CUL-1, M-CUL-2, M-CUL-3, and M-GEO-3 would ensure that any impacts would be less than significant.

- b. Does the Project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) (Less than Significant with Mitigation)**

The cumulative impact analyses determined whether the Project, in combination with other approved or foreseeable projects, would result in a significant cumulative impact and, if so, whether the Project's contribution to the significant cumulative impact would be cumulatively considerable. As demonstrated

above in Sections II and XII, the Project would have no impact on agriculture and forestry or mineral resources, respectively.

This initial study evaluates cumulative impacts using the General Plan EIR because the Project is consistent with applicable land use plans and policies. The General Plan EIR is incorporated by reference and available for public review at the City of Santa Clara Planning and Inspection Department, 1500 Warburton Avenue, Santa Clara, CA 95050, between the hours of 8:00 a.m. and 12:00 p.m. and between 1:00 p.m. and 5:00 p.m. Monday through Friday. The General Plan EIR evaluated future development, as identified in the current General Plan, and concluded that there would be a less than significant cumulatively considerable impact on aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, public services, and parks and recreation. Given this, and given that the Project, with mitigation, would have a less than significant impact on these resources, the Project's contribution to these impacts would not be singularly or cumulatively considerable.

The General Plan EIR identified the following significant environmental impacts:

- Land use impacts from a jobs/housing imbalance;
- Traffic impacts associated with a degradation in localized levels of service on roadway segments throughout the city;
- Impacts related to climate change because GHG emissions are projected to exceed the efficiency standards necessary to maintain long-term 2050 climate change reduction goals;
- Impacts on utilities due to insufficient landfill capacity (the City has sufficient landfill capacity through 2024, after which no specific plan is yet in place to provide additional landfill capacity); and
- Impacts associated with high noise levels from increased traffic volumes.

Given that the Project would be moderate in size, adding a net 183 new residential units and approximately 496 net new residents, the Project, in combination with future development in the city, would not have a significant cumulative impact on any environmental resources.

The following discussion describes how the Project's contribution to the impacts would be less than significant.

Land Use Impacts from a Jobs/Housing Imbalance

The General Plan EIR identified significant land use impacts from build-out of the General Plan land use designations. The General Plan EIR concluded that the proposed land uses would create a regional jobs/housing imbalance because workers who are unable to live near their employment would commute long distances from outlying areas. The General Plan EIR states that there are approximately two jobs for each resident in the city. As described in Section XIV, *Population and Housing*, the Project is expected to generate approximately 496 new net residents in the City by adding 183 new net housing units, which would be a population increase of 0.4 percent in the city. Given this, the Project would not contribute to the existing housing shortage or employment surplus. Therefore, the Project's contribution to this cumulative impact would not be cumulatively considerable.

Traffic Impacts

As discussed in Section XVII, *Transportation*, the projected traffic from the Project would not have a measurable impact on surrounding roadways or the transit network. The Project would generate 81 AM Peak-Hour trips and 99 PM Peak-Hour trips. The existing residential units are estimated to be generating 19 AM Peak-Hour trips and 24 PM Peak-Hour trips. Thus, the net increase compared to existing conditions would be 62 AM Peak-Hour trips and 75 PM Peak-Hour trips. This is below VTA's significance threshold and would not add substantial VMT to local roadways. Given this, the Project's contribution to this cumulative impact would not be cumulatively considerable.

Climate Change Impacts

The Project's contribution to global climate change is discussed in Section VIII, *Greenhouse Gas Emissions*. Development of the Project would incorporate applicable policies of the BAAQMD and comply with the City's CAP. The Project would implement all basic BAAQMD BMPs, as required by standard permit conditions, to reduce short-term construction-related diesel emissions. In addition, the Project would not exceed operational or construction emissions standards established by the BAAQMD after mitigation is implemented. Therefore, the Project's contribution to this cumulative impact would not be cumulatively considerable.

Utilities Impacts

As stated in Section XIX, *Utilities*, the City has available landfill capacity at Newby Island Landfill in San Jose through 2024. The current landfill situation is addressed within an ongoing IWMP to provide waste disposal services. The addition of the net 496 residents generated by the Project would not result in landfill capacity being met before 2024. Therefore, the Project's contribution to this cumulative impact would not be cumulatively considerable.

Noise Impacts

The General Plan EIR identified a significant impact related to localized increases in traffic noise on roadway segments. Based on the trip generation, the Project would not substantially increase traffic. Therefore, the Project's contribution to this cumulative impact would not be cumulatively considerable.

c. Does the Project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant with Mitigation)

Implementation of the Project would not result in any impacts that would be significant and unavoidable or cumulatively considerable. Implementation of the mitigation measures identified for air quality and noise impacts (M-AQ-1, M-AQ-2, M-NOI-1, M-NOI-2) would reduce all potential impacts to a less than significant level. Therefore, the Project would not result in impacts that would cause substantial adverse effects on human beings, either directly or indirectly.

Appendix A

Air Quality Modeling Data

Existing Operational CalEEMod Output

Laguna Clara II Existing - Santa Clara County, Annual

Laguna Clara II Existing Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	42.00	Dwelling Unit	3.00	23,953.00	120

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2022
Utility Company	User Defined				
CO2 Intensity (lb/MW hr)	0	CH4 Intensity (lb/MW hr)	0	N2O Intensity (lb/MW hr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Silicon Valley Power provides carbon-free electricity to residential users within the City of Santa Clara as its standard, default

Land Use - square footage of existing apartments to be demolished from PD

Off-road Equipment - No construction

Off-road Equipment - No construction

Off-road Equipment - No construction

Off-road Equipment - No construction

Off-road Equipment - No construction

Off-road Equipment - No construction

Grading - No construction

Trips and VMT - No construction

Vehicle Trips - Trip generation rate for low-rise apartment from Hexagon trip generation memo

Energy Use - Historical data used

Table Name	Column Name	Default Value	New Value
tblEnergyUse	NT24E	2,634.44	3,172.76
tblEnergyUse	NT24NG	2,498.00	3,155.00
tblEnergyUse	Refrigerator	712.50	643.00
tblEnergyUse	T24E	295.03	365.68
tblEnergyUse	T24NG	8,906.96	7,043.85
tblLandUse	LandUseSquareFeet	42,000.00	23,953.00
tblLandUse	LotAcreage	2.63	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	VendorTripNumber	4.00	0.00
tblTripsAndVMT	WorkerTripNumber	30.00	0.00
tblTripsAndVMT	WorkerTripNumber	6.00	0.00
tblVehicleTrips	ST_TR	7.16	7.32
tblVehicleTrips	SU_TR	6.07	7.32
tblVehicleTrips	WD_TR	6.59	7.32

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.1686	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.1686	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.1686	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.1686	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	10-16-2020	1-15-2021	0.0361	0.0361
5	1-16-2021	4-15-2021	0.1325	0.1325
		Highest	0.1325	0.1325

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2168	5.8300e-003	0.4456	2.8000e-004		0.0208	0.0208		0.0208	0.0208	1.9148	1.2959	3.2107	3.5700e-003	1.3000e-004	3.3373
Energy	2.3100e-003	0.0197	8.4000e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.8585	22.8585	4.4000e-004	4.2000e-004	22.9943
Mobile	0.0713	0.3021	0.8285	2.8600e-003	0.2640	2.4300e-003	0.2665	0.0707	2.2700e-003	0.0730	0.0000	262.1840	262.1840	8.8600e-003	0.0000	262.4055
Waste						0.0000	0.0000		0.0000	0.0000	3.9218	0.0000	3.9218	0.2318	0.0000	9.7161
Water						0.0000	0.0000		0.0000	0.0000	0.8682	0.0000	0.8682	0.0892	2.1100e-003	3.7248
Total	0.2904	0.3277	1.2825	3.2700e-003	0.2640	0.0248	0.2889	0.0707	0.0247	0.0954	6.7047	286.3384	293.0431	0.3338	2.6600e-003	302.1780

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2168	5.8300e-003	0.4456	2.8000e-004		0.0208	0.0208		0.0208	0.0208	1.9148	1.2959	3.2107	3.5700e-003	1.3000e-004	3.3373
Energy	2.3100e-003	0.0197	8.4000e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.8585	22.8585	4.4000e-004	4.2000e-004	22.9943
Mobile	0.0713	0.3021	0.8285	2.8600e-003	0.2640	2.4300e-003	0.2665	0.0707	2.2700e-003	0.0730	0.0000	262.1840	262.1840	8.8600e-003	0.0000	262.4055
Waste						0.0000	0.0000		0.0000	0.0000	3.9218	0.0000	3.9218	0.2318	0.0000	9.7161
Water						0.0000	0.0000		0.0000	0.0000	0.8682	0.0000	0.8682	0.0892	2.1100e-003	3.7248

Total	0.2904	0.3277	1.2825	3.2700e-003	0.2640	0.0248	0.2889	0.0707	0.0247	0.0954	6.7047	286.3384	293.0431	0.3338	2.6600e-003	302.1780
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/16/2020	2/12/2020	5	20	
2	Site Preparation	Site Preparation	2/13/2020	2/17/2020	5	3	
3	Grading	Grading	2/18/2020	2/25/2020	5	6	
4	Building Construction	Building Construction	2/26/2020	12/29/2020	5	220	
5	Paving	Paving	12/30/2020	1/12/2021	5	10	
6	Architectural Coating	Architectural Coating	1/13/2021	1/26/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 48,505; Residential Outdoor: 16,168; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Excavators	0	0.00	158	0.38
Building Construction	Cranes	0	0.00	231	0.29
Building Construction	Forklifts	0	0.00	89	0.20

Grading	Excavators	0	0.00	158	0.38
Paving	Pavers	0	0.00	130	0.42
Paving	Rollers	0	0.00	80	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Generator Sets	0	0.00	84	0.74
Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Graders	0	0.00	187	0.41
Paving	Paving Equipment	0	0.00	132	0.36
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Building Construction	Welders	0	0.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

3.5 Building Construction - 2020

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1686					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1686	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Archit. Coating	0.1686					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1686	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0713	0.3021	0.8285	2.8600e-003	0.2640	2.4300e-003	0.2665	0.0707	2.2700e-003	0.0730	0.0000	262.1840	262.1840	8.8600e-003	0.0000	262.4055

Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	2.3100e-003	0.0197	8.4000e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.8585	22.8585	4.4000e-004	4.2000e-004	22.9943
NaturalGas Unmitigated	2.3100e-003	0.0197	8.4000e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.8585	22.8585	4.4000e-004	4.2000e-004	22.9943

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	428352	2.3100e-003	0.0197	8.4000e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.8585	22.8585	4.4000e-004	4.2000e-004	22.9943
Total		2.3100e-003	0.0197	8.4000e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.8585	22.8585	4.4000e-004	4.2000e-004	22.9943

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	428352	2.3100e-003	0.0197	8.4000e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.8585	22.8585	4.4000e-004	4.2000e-004	22.9943
Total		2.3100e-003	0.0197	8.4000e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.8585	22.8585	4.4000e-004	4.2000e-004	22.9943

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	182650	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	182650	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Consumer Products	0.0936					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0969	2.2300e-003	0.1334	2.7000e-004		0.0191	0.0191		0.0191	0.0191	1.9148	0.7865	2.7013	3.0800e-003	1.3000e-004	2.8156
Landscaping	9.4300e-003	3.6000e-003	0.3122	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	0.5094	0.5094	4.9000e-004	0.0000	0.5217
Total	0.2168	5.8300e-003	0.4456	2.9000e-004		0.0208	0.0208		0.0208	0.0208	1.9148	1.2959	3.2107	3.5700e-003	1.3000e-004	3.3373

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8682	0.0892	2.1100e-003	3.7248
Unmitigated	0.8682	0.0892	2.1100e-003	3.7248

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.73647 / 1.72517	0.8682	0.0892	2.1100e-003	3.7248
Total		0.8682	0.0892	2.1100e-003	3.7248

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.73647 / 1.72517	0.8682	0.0892	2.1100e-003	3.7248
Total		0.8682	0.0892	2.1100e-003	3.7248

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.9218	0.2318	0.0000	9.7161
Unmitigated	3.9218	0.2318	0.0000	9.7161

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	19.32	3.9218	0.2318	0.0000	9.7161
Total		3.9218	0.2318	0.0000	9.7161

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	19.32	3.9218	0.2318	0.0000	9.7161
Total		3.9218	0.2318	0.0000	9.7161

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Project Construction and Operations CalEEMod Output

Laguna Clara II IS/MND - Santa Clara County, Annual

Laguna Clara II IS/MND

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	450.00	Space	0.00	180,000.00	0
Other Asphalt Surfaces	1.50	1000sqft	0.00	1,500.00	0
Apartments Mid Rise	225.00	Dwelling Unit	12.60	78,026.00	644

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2022
Utility Company	User Defined				
CO2 Intensity (lb/MW hr)	0	CH4 Intensity (lb/MW hr)	0	N2O Intensity (lb/MW hr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Silicon Valley Power provides carbon-free electricity to residential users within the City of Santa Clara as its standard, default power supply.

Land Use - 12.6 acres to be disturbed, 78,026 residential square feet; other values are CalEEMod defaults

Construction Phase - Client shifted 10 workdays from Paving phase to Building Construction phase

Trips and VMT - Demo = 300 truck roundtrips; Grading = 3,800 loads; Building Construction = 10 trucks/day; Zanker Recycling = 10 mile one way trip

Demolition - 6,000 CY of mixed construction debris produced by the project = 3,000 tons of mixed construction debris

Grading - 3 acres graded and 35,500 CY of export from data needs document

Vehicle Trips - ITE daily trip gen rate from trip gen memo

Woodstoves - # wood fireplaces (38.25) added to # gas fireplaces (33.75) = 72

Construction Off-road Equipment Mitigation - Tier 4 Final mitigation for all offroad equipment; BAAQMD's Basic Construction MM's for dust control

Energy Mitigation - Solar power generation from Data Needs document

[illegible]

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	26.00
tblConstructionPhase	NumDays	10.00	13.00
tblConstructionPhase	NumDays	30.00	39.00
tblConstructionPhase	NumDays	300.00	401.00
tblConstructionPhase	NumDays	20.00	16.00
tblConstructionPhase	NumDays	20.00	26.00
tblFireplaces	NumberGas	33.75	72.00
tblFireplaces	NumberWood	38.25	0.00
tblGrading	AcresOfGrading	97.50	3.00
tblGrading	MaterialExported	0.00	35,500.00
tblLandUse	LandUseSquareFeet	225,000.00	78,026.00
tblLandUse	LotAcreage	4.05	0.00
tblLandUse	LotAcreage	0.03	0.00
tblLandUse	LotAcreage	5.92	12.60
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripNumber	297.00	600.00
tblTripsAndVMT	HaulingTripNumber	4,438.00	7,600.00
tblTripsAndVMT	VendorTripNumber	54.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	50.00
tblTripsAndVMT	WorkerTripNumber	20.00	50.00
tblTripsAndVMT	WorkerTripNumber	238.00	170.00
tblTripsAndVMT	WorkerTripNumber	15.00	30.00
tblTripsAndVMT	WorkerTripNumber	48.00	70.00
tblVehicleTrips	ST_TR	6.39	5.44
tblVehicleTrips	SU_TR	5.86	5.44

tblVehicleTrips	WD_TR	6.65	5.44
tblWoodstoves	NumberCatalytic	4.50	0.00
tblWoodstoves	NumberNoncatalytic	4.50	0.00

2.0 Emissions Summary

2.1 Overall Construction
Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2274	2.8266	1.5905	4.64E-03	0.3435	0.0986	0.442	0.1542	0.0913	0.2455	0	424.6277	424.6277	0.0738	0	426.4728
2021	0.3249	2.5904	2.742	5.83E-03	0.1931	0.1268	0.3199	0.0518	0.1192	0.171	0	515.5471	515.5471	0.0792	0	517.5268
2022	0.7237	1.0752	1.2689	2.69E-03	0.089	0.05	0.139	0.0238	0.047	0.0709	0	237.5377	237.5377	0.0379	0	238.4858
Maximum	0.7237	2.8266	2.7420	5.8300e-003	0.3435	0.1268	0.4420	0.1542	0.1192	0.2455	0	515.5471	515.5471	0.0792	0	517.5268

CO2

1177.713

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0663	0.9727	1.6362	4.64E-03	0.1947	6.29E-03	0.201	0.0803	6.18E-03	0.0864	0.0000	424.6274	424.6274	0.0738	0.0000	426.4726
2021	0.1196	0.6072	2.8575	5.83E-03	0.1931	7.02E-03	0.2002	0.0518	6.91E-03	0.0587	0.0000	515.5468	515.5468	0.0792	0.0000	517.5264
2022	0.6404	0.2568	1.3501	2.69E-03	0.089	3.27E-03	0.0923	0.0238	3.22E-03	0.0271	0.0000	237.5375	237.5375	0.0379	0.0000	238.4856

Maximum	0.6404	0.9727	2.8575	5.8300e-003	0.1947	7.0200e-003	0.2010	0.0803	6.9100e-003	0.0864	0.0000	515.5468	515.5468	0.0792	0.0000	517.5264
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	35.24	71.71	-4.33	0.00	23.78	93.98	45.24	32.18	93.67	64.67	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-31-2020	10-30-2020	2.0786	0.6738
2	10-31-2020	1-30-2021	1.2285	0.4290
3	1-31-2021	4-29-2021	0.7117	0.1786
4	4-30-2021	7-30-2021	0.7328	0.1817
5	7-31-2021	10-30-2021	0.7342	0.1831
6	10-31-2021	1-30-2022	0.7134	0.1839
7	1-31-2022	4-29-2022	0.6416	0.1725
8	4-30-2022	7-30-2022	0.9398	0.6628
		Highest	2.0786	0.6738

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4270	0.0271	1.6799	1.4000e-004		9.8800e-003	9.8800e-003		9.8800e-003	9.8800e-003	0.0000	11.7255	11.7255	2.8300e-003	1.6000e-004	11.8452
Energy	0.0105	0.0896	0.0381	5.7000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003	0.0000	103.7326	103.7326	1.9900e-003	1.9000e-003	104.3491
Mobile	0.2839	1.2029	3.2983	0.0114	1.0512	9.6800e-003	1.0609	0.2814	9.0400e-003	0.2904	0.0000	1,043.8240	1,043.8240	0.0353	0.0000	1,044.7059
Waste						0.0000	0.0000		0.0000	0.0000	21.0096	0.0000	21.0096	1.2416	0.0000	52.0503
Water						0.0000	0.0000		0.0000	0.0000	4.6508	0.0000	4.6508	0.4777	0.0113	19.9542

Total	0.7213	1.3196	5.0164	0.0121	1.0512	0.0268	1.0780	0.2814	0.0262	0.3076	25.6604	1,159.282 2	1,184.9425	1.7594	0.0133	1,232.904 6
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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4270	0.0271	1.6799	1.4000e- 004		9.8800e- 003	9.8800e- 003		9.8800e- 003	9.8800e- 003	0.0000	11.7255	11.7255	2.8300e- 003	1.6000e- 004	11.8452
Energy	0.0105	0.0896	0.0381	5.7000e- 004		7.2400e- 003	7.2400e- 003		7.2400e- 003	7.2400e- 003	0.0000	103.7326	103.7326	1.9900e- 003	1.9000e- 003	104.3491
Mobile	0.2839	1.2029	3.2983	0.0114	1.0512	9.6800e- 003	1.0609	0.2814	9.0400e- 003	0.2904	0.0000	1,043.824 0	1,043.8240	0.0353	0.0000	1,044.705 9
Waste						0.0000	0.0000		0.0000	0.0000	21.0096	0.0000	21.0096	1.2416	0.0000	52.0503
Water						0.0000	0.0000		0.0000	0.0000	4.6508	0.0000	4.6508	0.4777	0.0113	19.9542
Total	0.7213	1.3196	5.0164	0.0121	1.0512	0.0268	1.0780	0.2814	0.0262	0.3076	25.6604	1,159.282 2	1,184.9425	1.7594	0.0133	1,232.904 6

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/31/2020	9/4/2020	5	26	
2	Site Preparation	Site Preparation	9/5/2020	9/23/2020	5	13	
3	Grading	Grading	9/24/2020	11/17/2020	5	39	
4	Building Construction	Building Construction	11/18/2020	6/1/2022	5	401	
5	Paving	Paving	6/2/2022	6/23/2022	5	16	

6	Architectural Coating	Architectural Coating	6/24/2022	7/29/2022	5	26
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Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 158,003; Residential Outdoor: 52,668; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	40	0	600	10.8	7.3	10	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	50	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Grading	8	50	0	7,600.00	10.8	7.3	10	LD_Mix	HDT_Mix	HHDT
Building Construction	9	170	20	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Paving	6	30	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	70	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0321	0.0000	0.0321	4.8600e-003	0.0000	4.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0431	0.4316	0.2828	5.0000e-004		0.0216	0.0216		0.0200	0.0200	0.0000	44.1982	44.1982	0.0125	0.0000	44.5101
Total	0.0431	0.4316	0.2828	5.0000e-004	0.0321	0.0216	0.0537	4.8600e-003	0.0200	0.0249	0.0000	44.1982	44.1982	0.0125	0.0000	44.5101

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5200e-003	0.0575	0.0111	1.3000e-004	2.5500e-003	1.5000e-004	2.7000e-003	7.0000e-004	1.4000e-004	8.4000e-004	0.0000	12.8892	12.8892	7.1000e-004	0.0000	12.9071
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7300e-003	1.2400e-003	0.0130	4.0000e-005	4.1200e-003	3.0000e-005	4.1500e-003	1.1000e-003	2.0000e-005	1.1200e-003	0.0000	3.5368	3.5368	9.0000e-005	0.0000	3.5390
Total	3.2500e-003	0.0588	0.0241	1.7000e-004	6.6700e-003	1.8000e-004	6.8500e-003	1.8000e-003	1.6000e-004	1.9600e-003	0.0000	16.4260	16.4260	8.0000e-004	0.0000	16.4460

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0144	0	0.0144	2.19E-03	0	2.19E-03	0	0	0	0	0	0
Off-Road	6.01E-03	0.026	0.3026	5.00E-04		8.00E-04	8.00E-04		8.00E-04	8.00E-04	0	44.1981	44.1981	0.0125	0	44.5101
Total	6.01E-03	0.026	0.3026	5.00E-04	0.0144	8.00E-04	0.0152	2.19E-03	8.00E-04	2.99E-03	0	44.1981	44.1981	0.0125	0	44.5101

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.52E-03	0.0575	0.0111	1.30E-04	2.55E-03	1.50E-04	2.70E-03	7.00E-04	1.40E-04	8.40E-04	0	12.8892	12.8892	7.10E-04	0	12.9071

Vendor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worker	1.73E-03	1.24E-03	0.013	4.00E-05	4.12E-03	3.00E-05	4.15E-03	1.10E-03	2.00E-05	1.12E-03	0	3.5368	3.5368	9.00E-05	0	3.539
Total	3.25E-03	0.0588	0.0241	1.70E-04	6.67E-03	1.80E-04	6.85E-03	1.80E-03	1.60E-04	1.96E-03	0	16.426	16.426	8.00E-04	0	16.446

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1174	0.0000	0.1174	0.0646	0.0000	0.0646	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2757	0.1398	2.5000e-004		0.0143	0.0143		0.0131	0.0131	0.0000	21.7299	21.7299	7.0300e-003	0.0000	21.9056
Total	0.0265	0.2757	0.1398	2.5000e-004	0.1174	0.0143	0.1317	0.0646	0.0131	0.0777	0.0000	21.7299	21.7299	7.0300e-003	0.0000	21.9056

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0800e-003	7.8000e-004	8.1300e-003	2.0000e-005	2.5800e-003	2.0000e-005	2.5900e-003	6.9000e-004	2.0000e-005	7.0000e-004	0.0000	2.2105	2.2105	5.0000e-005	0.0000	2.2118
Total	1.0800e-003	7.8000e-004	8.1300e-003	2.0000e-005	2.5800e-003	2.0000e-005	2.5900e-003	6.9000e-004	2.0000e-005	7.0000e-004	0.0000	2.2105	2.2105	5.0000e-005	0.0000	2.2118

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0528	0	0.0528	0.0291	0	0.0291	0	0	0	0	0	0
Off-Road	3.03E-03	0.0131	0.1357	2.50E-04		4.00E-04	4.00E-04		4.00E-04	4.00E-04	0	21.7299	21.7299	7.03E-03	0	21.9056
Total	3.03E-03	0.0131	0.1357	2.50E-04	0.0528	4.00E-04	0.0532	0.0291	4.00E-04	0.0295	0	21.7299	21.7299	7.03E-03	0	21.9056

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worker	1.08E-03	7.80E-04	8.13E-03	2.00E-05	2.58E-03	2.00E-05	2.59E-03	6.90E-04	2.00E-05	7.00E-04	0	2.2105	2.2105	5.00E-05	0	2.2118
Total	1.08E-03	7.80E-04	8.13E-03	2.00E-05	2.58E-03	2.00E-05	2.59E-03	6.90E-04	2.00E-05	7.00E-04	0	2.2105	2.2105	5.00E-05	0	2.2118

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Fugitive Dust					0.1210	0.0000	0.1210	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0868	0.9789	0.6232	1.2100e-003		0.0424	0.0424		0.0390	0.0390	0.0000	106.2444	106.2444	0.0344	0.0000	107.1034
Total	0.0868	0.9789	0.6232	1.2100e-003	0.1210	0.0424	0.1634	0.0650	0.0390	0.1040	0.0000	106.2444	106.2444	0.0344	0.0000	107.1034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0193	0.7286	0.1406	1.6900e-003	0.0323	1.8900e-003	0.0341	8.8700e-003	1.8100e-003	0.0107	0.0000	163.2634	163.2634	9.0400e-003	0.0000	163.4895
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2400e-003	2.3300e-003	0.0244	7.0000e-005	7.7300e-003	5.0000e-005	7.7800e-003	2.0600e-003	5.0000e-005	2.1000e-003	0.0000	6.6315	6.6315	1.6000e-004	0.0000	6.6355
Total	0.0225	0.7309	0.1650	1.7600e-003	0.0400	1.9400e-003	0.0419	0.0109	1.8600e-003	0.0128	0.0000	169.8949	169.8949	9.2000e-003	0.0000	170.1250

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0545	0	0.0545	0.0293	0	0.0293	0	0	0	0	0	0
Off-Road	0.0149	0.0644	0.6435	1.21E-03		1.98E-03	1.98E-03		1.98E-03	1.98E-03	0	106.2443	106.2443	0.0344	0	107.1033

Total	0.0149	0.0644	0.6435	1.21E-03	0.0545	1.98E-03	0.0564	0.0293	1.98E-03	0.0312	0	106.2443	106.2443	0.0344	0	107.1033
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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0193	0.7286	0.1406	1.69E-03	0.0323	1.89E-03	0.0341	8.87E-03	1.81E-03	0.0107	0	163.2634	163.2634	9.04E-03	0	163.4895
Vendor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worker	3.24E-03	2.33E-03	0.0244	7.00E-05	7.73E-03	5.00E-05	7.78E-03	2.06E-03	5.00E-05	2.10E-03	0	6.6315	6.6315	1.60E-04	0	6.6355
Total	0.0225	0.7309	0.165	1.76E-03	0.04	1.94E-03	0.0419	0.0109	1.86E-03	0.0128	0	169.8949	169.8949	9.20E-03	0	170.125

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0339	0.3070	0.2696	4.3000e-004		0.0179	0.0179		0.0168	0.0168	0.0000	37.0576	37.0576	9.0400e-003	0.0000	37.2836
Total	0.0339	0.3070	0.2696	4.3000e-004		0.0179	0.0179		0.0168	0.0168	0.0000	37.0576	37.0576	9.0400e-003	0.0000	37.2836

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2700e-003	0.0364	9.7000e-003	9.0000e-005	2.1100e-003	1.8000e-004	2.2900e-003	6.1000e-004	1.7000e-004	7.8000e-004	0.0000	8.3662	8.3662	3.8000e-004	0.0000	8.3758
Worker	9.0300e-003	6.4900e-003	0.0681	2.0000e-004	0.0216	1.4000e-004	0.0217	5.7400e-003	1.3000e-004	5.8700e-003	0.0000	18.5001	18.5001	4.5000e-004	0.0000	18.5114
Total	0.0103	0.0429	0.0778	2.9000e-004	0.0237	3.2000e-004	0.0240	6.3500e-003	3.0000e-004	6.6500e-003	0.0000	26.8662	26.8662	8.3000e-004	0.0000	26.8872

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.25E-03	0.0358	0.2794	4.30E-04		6.50E-04	6.50E-04		6.50E-04	6.50E-04	0	37.0576	37.0576	9.04E-03	0	37.2836
Total	5.25E-03	0.0358	0.2794	4.30E-04		6.50E-04	6.50E-04		6.50E-04	6.50E-04	0	37.0576	37.0576	9.04E-03	0	37.2836

Mitigated Construction Off-Site

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

Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	1.27E-03	0.0364	9.70E-03	9.00E-05	2.11E-03	1.80E-04	2.29E-03	6.10E-04	1.70E-04	7.80E-04	0	8.3662	8.3662	3.80E-04	0	8.3758
Worker	9.03E-03	6.49E-03	0.0681	2.00E-04	0.0216	1.40E-04	0.0217	5.74E-03	1.30E-04	5.87E-03	0	18.5001	18.5001	4.50E-04	0	18.5114
Total	0.0103	0.0429	0.0778	2.90E-04	0.0237	3.20E-04	0.024	6.35E-03	3.00E-04	6.65E-03	0	26.8662	26.8662	8.30E-04	0	26.8872

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5100e-003	0.2682	0.0714	7.0000e-004	0.0172	5.9000e-004	0.0178	4.9600e-003	5.7000e-004	5.5300e-003	0.0000	67.6067	67.6067	2.9500e-003	0.0000	67.6803
Worker	0.0683	0.0473	0.5075	1.6100e-003	0.1760	1.1100e-003	0.1771	0.0468	1.0200e-003	0.0478	0.0000	145.6538	145.6538	3.3100e-003	0.0000	145.7366
Total	0.0769	0.3155	0.5789	2.3100e-003	0.1931	1.7000e-003	0.1948	0.0518	1.5900e-003	0.0533	0.0000	213.2605	213.2605	6.2600e-003	0.0000	213.4170

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0428	0.2916	2.2786	3.51E-03		5.32E-03	5.32E-03		5.32E-03	5.32E-03	0	302.2863	302.2863	0.0729	0	304.1095
Total	0.0428	0.2916	2.2786	3.51E-03		5.32E-03	5.32E-03		5.32E-03	5.32E-03	0	302.2863	302.2863	0.0729	0	304.1095

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	8.51E-03	0.2682	0.0714	7.00E-04	0.0172	5.90E-04	0.0178	4.96E-03	5.70E-04	5.53E-03	0	67.6067	67.6067	2.95E-03	0	67.6803
Worker	0.0683	0.0473	0.5075	1.61E-03	0.176	1.11E-03	0.1771	0.0468	1.02E-03	0.0478	0	145.6538	145.6538	3.31E-03	0	145.7366
Total	0.0769	0.3155	0.5789	2.31E-03	0.1931	1.70E-03	0.1948	0.0518	1.59E-03	0.0533	0	213.2605	213.2605	6.26E-03	0	213.417

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0921	0.8432	0.8836	1.4500e-003		0.0437	0.0437		0.0411	0.0411	0.0000	125.1316	125.1316	0.0300	0.0000	125.8811
Total	0.0921	0.8432	0.8836	1.4500e-003		0.0437	0.0437		0.0411	0.0411	0.0000	125.1316	125.1316	0.0300	0.0000	125.8811

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2900e-003	0.1049	0.0278	2.9000e-004	7.1100e-003	2.1000e-004	7.3200e-003	2.0500e-003	2.0000e-004	2.2600e-003	0.0000	27.7075	27.7075	1.1600e-003	0.0000	27.7366
Worker	0.0264	0.0176	0.1930	6.4000e-004	0.0728	4.5000e-004	0.0733	0.0194	4.1000e-004	0.0198	0.0000	58.0813	58.0813	1.2300e-003	0.0000	58.1120
Total	0.0297	0.1225	0.2208	9.3000e-004	0.0799	6.6000e-004	0.0806	0.0214	6.1000e-004	0.0220	0.0000	85.7888	85.7888	2.3900e-003	0.0000	85.8487

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0177	0.1207	0.9429	1.45E-03		2.20E-03	2.20E-03		2.20E-03	2.20E-03	0	125.1315	125.1315	0.03	0	125.8809

Total	0.0177	0.1207	0.9429	1.45E-03		2.20E-03	2.20E-03		2.20E-03	2.20E-03	0	125.1315	125.1315	0.03	0	125.8809
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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	3.29E-03	0.1049	0.0278	2.90E-04	7.11E-03	2.10E-04	7.32E-03	2.05E-03	2.00E-04	2.26E-03	0	27.7075	27.7075	1.16E-03	0	27.7366
Worker	0.0264	0.0176	0.193	6.40E-04	0.0728	4.50E-04	0.0733	0.0194	4.10E-04	0.0198	0	58.0813	58.0813	1.23E-03	0	58.112
Total	0.0297	0.1225	0.2208	9.30E-04	0.0799	6.60E-04	0.0806	0.0214	6.10E-04	0.022	0	85.7888	85.7888	2.39E-03	0	85.8487

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8200e-003	0.0890	0.1166	1.8000e-004		4.5400e-003	4.5400e-003		4.1800e-003	4.1800e-003	0.0000	16.0221	16.0221	5.1800e-003	0.0000	16.1516
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.8200e-003	0.0890	0.1166	1.8000e-004		4.5400e-003	4.5400e-003		4.1800e-003	4.1800e-003	0.0000	16.0221	16.0221	5.1800e-003	0.0000	16.1516

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	4.6000e-004	5.0500e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.5185	1.5185	3.0000e-005	0.0000	1.5193
Total	6.9000e-004	4.6000e-004	5.0500e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.5185	1.5185	3.0000e-005	0.0000	1.5193

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.24E-03	9.72E-03	0.1384	1.80E-04		3.00E-04	3.00E-04		3.00E-04	3.00E-04	0	16.022	16.022	5.18E-03	0	16.1516
Paving	0					0	0		0	0	0	0	0	0	0	0
Total	2.24E-03	9.72E-03	0.1384	1.80E-04		3.00E-04	3.00E-04		3.00E-04	3.00E-04	0	16.022	16.022	5.18E-03	0	16.1516

Mitigated Construction Off-Site

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

Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worker	6.90E-04	4.60E-04	5.05E-03	2.00E-05	1.90E-03	1.00E-05	1.92E-03	5.10E-04	1.00E-05	5.20E-04	0	1.5185	1.5185	3.00E-05	0	1.5193
Total	6.90E-04	4.60E-04	5.05E-03	2.00E-05	1.90E-03	1.00E-05	1.92E-03	5.10E-04	1.00E-05	5.20E-04	0	1.5185	1.5185	3.00E-05	0	1.5193

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5871					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0183	0.0236	4.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	3.3192	3.3192	2.2000e-004	0.0000	3.3246
Total	0.5898	0.0183	0.0236	4.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	3.3192	3.3192	2.2000e-004	0.0000	3.3246

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6200e-003	1.7400e-003	0.0191	6.0000e-005	7.2200e-003	4.0000e-005	7.2600e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	5.7575	5.7575	1.2000e-004	0.0000	5.7606
Total	2.6200e-003	1.7400e-003	0.0191	6.0000e-005	7.2200e-003	4.0000e-005	7.2600e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	5.7575	5.7575	1.2000e-004	0.0000	5.7606

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5871					0	0		0	0	0	0	0	0	0	0
Off-Road	3.90E-04	1.67E-03	0.0238	4.00E-05		5.00E-05	5.00E-05		5.00E-05	5.00E-05	0	3.3192	3.3192	2.20E-04	0	3.3246
Total	0.5875	1.67E-03	0.0238	4.00E-05		5.00E-05	5.00E-05		5.00E-05	5.00E-05	0	3.3192	3.3192	2.20E-04	0	3.3246

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worker	2.62E-03	1.74E-03	0.0191	6.00E-05	7.22E-03	4.00E-05	7.26E-03	1.92E-03	4.00E-05	1.96E-03	0	5.7575	5.7575	1.20E-04	0	5.7606
Total	2.62E-03	1.74E-03	0.0191	6.00E-05	7.22E-03	4.00E-05	7.26E-03	1.92E-03	4.00E-05	1.96E-03	0	5.7575	5.7575	1.20E-04	0	5.7606

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2839	1.2029	3.2983	0.0114	1.0512	9.6800e-003	1.0609	0.2814	9.0400e-003	0.2904	0.0000	1,043.8240	1,043.8240	0.0353	0.0000	1,044.7059
Unmitigated	0.2839	1.2029	3.2983	0.0114	1.0512	9.6800e-003	1.0609	0.2814	9.0400e-003	0.2904	0.0000	1,043.8240	1,043.8240	0.0353	0.0000	1,044.7059

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,224.00	1,224.00	1224.00	2,826,959	2,826,959
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	1,224.00	1,224.00	1,224.00	2,826,959	2,826,959

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740
Enclosed Parking with Elevator	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740
Other Asphalt Surfaces	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

Total		0.0105	0.0896	0.0381	5.7000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003	0.0000	103.7326	103.7326	1.9900e-003	1.9000e-003	104.3491
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Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.94388e+006	0.0105	0.0896	0.0381	5.7000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003	0.0000	103.7326	103.7326	1.9900e-003	1.9000e-003	104.3491
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0105	0.0896	0.0381	5.7000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003	0.0000	103.7326	103.7326	1.9900e-003	1.9000e-003	104.3491

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	928879	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	1.0548e+006	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	702212	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	828133	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	-226667	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4270	0.0271	1.6799	1.4000e-004		9.8800e-003	9.8800e-003		9.8800e-003	9.8800e-003	0.0000	11.7255	11.7255	2.8300e-003	1.6000e-004	11.8452
Unmitigated	0.4270	0.0271	1.6799	1.4000e-004		9.8800e-003	9.8800e-003		9.8800e-003	9.8800e-003	0.0000	11.7255	11.7255	2.8300e-003	1.6000e-004	11.8452

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0587					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.1000e-004	7.7600e-003	3.3000e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004	0.0000	8.9884	8.9884	1.7000e-004	1.6000e-004	9.0418
Landscaping	0.0509	0.0193	1.6766	9.0000e-005		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003	0.0000	2.7371	2.7371	2.6500e-003	0.0000	2.8034
Total	0.4270	0.0271	1.6799	1.4000e-004		9.8900e-003	9.8900e-003		9.8900e-003	9.8900e-003	0.0000	11.7255	11.7255	2.8200e-003	1.6000e-004	11.8452

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0587					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.1000e-004	7.7600e-003	3.3000e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004	0.0000	8.9884	8.9884	1.7000e-004	1.6000e-004	9.0418
Landscaping	0.0509	0.0193	1.6766	9.0000e-005		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003	0.0000	2.7371	2.7371	2.6500e-003	0.0000	2.8034
Total	0.4270	0.0271	1.6799	1.4000e-004		9.8900e-003	9.8900e-003		9.8900e-003	9.8900e-003	0.0000	11.7255	11.7255	2.8200e-003	1.6000e-004	11.8452

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.6508	0.4777	0.0113	19.9542
Unmitigated	4.6508	0.4777	0.0113	19.9542

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.6597 / 9.24196	4.6508	0.4777	0.0113	19.9542
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		4.6508	0.4777	0.0113	19.9542

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
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Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.6597 / 9.24196	4.6508	0.4777	0.0113	19.9542
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		4.6508	0.4777	0.0113	19.9542

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	21.0096	1.2416	0.0000	52.0503
Unmitigated	21.0096	1.2416	0.0000	52.0503

8.2 Waste by Land Use

Unmitigated

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

Apartments Mid Rise	103.5	21.0096	1.2416	0.0000	52.0503
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		21.0096	1.2416	0.0000	52.0503

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	103.5	21.0096	1.2416	0.0000	52.0503
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		21.0096	1.2416	0.0000	52.0503

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

CH4

N2O

CO2e

0.1909

0 1182.485

Laguna Clara II IS/MND - Santa Clara County, Summer

Laguna Clara II IS/MND

Santa Clara County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	450.00	Space	0.00	180,000.00	0
Other Asphalt Surfaces	1.50	1000sqft	0.00	1,500.00	0
Apartments Mid Rise	225.00	Dwelling Unit	12.60	78,026.00	644

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2022
Utility Company	User Defined				
CO2 Intensity (lb/MW hr)	0	CH4 Intensity (lb/MW hr)	0	N2O Intensity (lb/MW hr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Silicon Valley Power provides carbon-free electricity to residential users within the City of Santa Clara as its standard, default power supply.

Land Use - 12.6 acres to be disturbed, 78,026 residential square feet; other values are CalEEMod defaults

Construction Phase - Client shifted 10 workdays from Paving phase to Building Construction phase

Trips and VMT - Demo = 300 truck roundtrips; Grading = 3,800 loads; Building Construction = 10 trucks/day; Zanker Recycling = 10 mile one way trip

Demolition - 6,000 CY of mixed construction debris produced by the project = 3,000 tons of mixed construction debris

Grading - 3 acres graded and 35,500 CY of export from data needs document

Vehicle Trips - ITE daily trip gen rate from trip gen memo

Woodstoves - # wood fireplaces (38.25) added to # gas fireplaces (33.75) = 72

Construction Off-road Equipment Mitigation - Tier 4 Final mitigation for all offroad equipment; BAAQMD's Basic Construction MM's for dust control

Energy Mitigation - Solar power generation from Data Needs document

[illegible]

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	26.00
tblConstructionPhase	NumDays	10.00	13.00
tblConstructionPhase	NumDays	30.00	39.00
tblConstructionPhase	NumDays	300.00	401.00
tblConstructionPhase	NumDays	20.00	16.00
tblConstructionPhase	NumDays	20.00	26.00
tblFireplaces	NumberGas	33.75	72.00
tblFireplaces	NumberWood	38.25	0.00
tblGrading	AcresOfGrading	97.50	3.00
tblGrading	MaterialExported	0.00	35,500.00
tblLandUse	LandUseSquareFeet	225,000.00	78,026.00
tblLandUse	LotAcreage	4.05	0.00
tblLandUse	LotAcreage	0.03	0.00
tblLandUse	LotAcreage	5.92	12.60
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripNumber	297.00	600.00
tblTripsAndVMT	HaulingTripNumber	4,438.00	7,600.00
tblTripsAndVMT	VendorTripNumber	54.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	50.00
tblTripsAndVMT	WorkerTripNumber	20.00	50.00
tblTripsAndVMT	WorkerTripNumber	238.00	170.00
tblTripsAndVMT	WorkerTripNumber	15.00	30.00
tblTripsAndVMT	WorkerTripNumber	48.00	70.00
tblVehicleTrips	ST_TR	6.39	5.44
tblVehicleTrips	SU_TR	5.86	5.44

tblVehicleTrips	WD_TR	6.65	5.44
tblWoodstoves	NumberCatalytic	4.50	0.00
tblWoodstoves	NumberNoncatalytic	4.50	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.5945	87.2452	40.1431	0.1537	18.4770	2.2722	20.6770	10.0396	2.0939	12.0636	0.0000	15,755.4251	15,755.4251	2.4481	0.0000	15,816.6286
2021	2.5121	19.7896	21.3716	0.0457	1.5319	0.9716	2.5035	0.4094	0.9134	1.3228	0.0000	4,453.2209	4,453.2209	0.6701	0.0000	4,469.9740
2022	45.5773	17.8300	20.7936	0.0451	1.5319	0.8212	2.3532	0.4094	0.7725	1.1819	0.0000	4,400.6149	4,400.6149	0.7188	0.0000	4,417.1627
Maximum	45.5773	87.2452	40.1431	0.1537	18.4770	2.2722	20.6770	10.0396	2.0939	12.0636	0.0000	15,755.4251	15,755.4251	2.4481	0.0000	15,816.6286

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	1.9060	40.3477	41.1840	0.1537	8.5406	0.1998	8.6052	4.5778	0.1955	4.6422	0.0000	15,755.4251	15,755.4251	2.4481	0.0000	15,816.6286
2021	0.9390	4.5922	22.2567	0.0457	1.5319	0.0538	1.5857	0.4094	0.0529	0.4623	0.0000	4,453.2209	4,453.2209	0.6701	0.0000	4,469.9739
2022	45.4025	4.4491	21.8905	0.0451	1.5319	0.0530	1.5849	0.4094	0.0522	0.4616	0.0000	4,400.6149	4,400.6149	0.7188	0.0000	4,417.1627

Maximum	45.4025	40.3477	41.1840	0.1537	8.5406	0.1998	8.6052	4.5778	0.1955	4.6422	0.0000	15,755.4251	15,755.4251	2.4481	0.0000	15,816.6286
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	10.13	60.45	-3.67	0.00	46.13	92.46	53.88	50.30	92.05	61.79	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational
Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7844	1.6082	19.2219	9.8800e-003		0.2155	0.2155		0.2155	0.2155	0.0000	1,812.3466	1,812.3466	0.0666	0.0326	1,823.7300
Energy	0.0574	0.4908	0.2089	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.5516	626.5516	0.0120	0.0115	630.2749
Mobile	1.7921	6.4012	19.0420	0.0664	5.9799	0.0531	6.0330	1.5962	0.0496	1.6458		6,703.1868	6,703.1868	0.2163		6,708.5943
Total	4.6339	8.5002	38.4727	0.0795	5.9799	0.3083	6.2882	1.5962	0.3048	1.9010	0.0000	9,142.0850	9,142.0850	0.2949	0.0441	9,162.5991

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7844	1.6082	19.2219	9.8800e-003		0.2155	0.2155		0.2155	0.2155	0.0000	1,812.3466	1,812.3466	0.0666	0.0326	1,823.7300
Energy	0.0574	0.4908	0.2089	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.5516	626.5516	0.0120	0.0115	630.2749
Mobile	1.7921	6.4012	19.0420	0.0664	5.9799	0.0531	6.0330	1.5962	0.0496	1.6458		6,703.1868	6,703.1868	0.2163		6,708.5943

Total	4.6339	8.5002	38.4727	0.0795	5.9799	0.3083	6.2882	1.5962	0.3048	1.9010	0.0000	9,142.0850	9,142.0850	0.2949	0.0441	9,162.5991
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/31/2020	9/4/2020	5	26	
2	Site Preparation	Site Preparation	9/5/2020	9/23/2020	5	13	
3	Grading	Grading	9/24/2020	11/17/2020	5	39	
4	Building Construction	Building Construction	11/18/2020	6/1/2022	5	401	
5	Paving	Paving	6/2/2022	6/23/2022	5	16	
6	Architectural Coating	Architectural Coating	6/24/2022	7/29/2022	5	26	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 158,003; Residential Outdoor: 52,668; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38

Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	40.00	0.00	600.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	50.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	50.00	0.00	7,600.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	170.00	20.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	70.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4691	0.0000	2.4691	0.3739	0.0000	0.3739			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	3.3121	33.2010	21.7532	0.0388	2.4691	1.6587	4.1278	0.3739	1.5419	1.9157		3,747.7049	3,747.7049	1.0580		3,774.1536

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1149	4.3746	0.8064	0.0104	0.2019	0.0113	0.2132	0.0554	0.0109	0.0662		1,106.8291	1,106.8291	0.0587		1,108.2971
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1390	0.0854	1.1001	3.2400e-003	0.3286	2.0500e-003	0.3306	0.0872	1.8900e-003	0.0891		322.4026	322.4026	7.8900e-003		322.5998
Total	0.2540	4.4600	1.9065	0.0136	0.5305	0.0134	0.5439	0.1425	0.0127	0.1553		1,429.2316	1,429.2316	0.0666		1,430.8969

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Fugitive Dust					1.1111	0.0000	1.1111	0.1682	0.0000	0.1682			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	0.4623	2.0032	23.2798	0.0388	1.1111	0.0616	1.1727	0.1682	0.0616	0.2299	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1149	4.3746	0.8064	0.0104	0.2019	0.0113	0.2132	0.0554	0.0109	0.0662		1,106.8291	1,106.8291	0.0587		1,108.2971
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1390	0.0854	1.1001	3.2400e-003	0.3286	2.0500e-003	0.3306	0.0872	1.8900e-003	0.0891		322.4026	322.4026	7.8900e-003		322.5998
Total	0.2540	4.4600	1.9065	0.0136	0.5305	0.0134	0.5439	0.1425	0.0127	0.1553		1,429.2316	1,429.2316	0.0666		1,430.8969

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975

Total	4.0765	42.4173	21.5136	0.0380	18.0663	2.1974	20.2637	9.9307	2.0216	11.9523		3,685.1016	3,685.1016	1.1918		3,714.8975
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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1738	0.1067	1.3752	4.0400e-003	0.4107	2.5600e-003	0.4133	0.1090	2.3600e-003	0.1113		403.0032	403.0032	9.8600e-003		403.2498
Total	0.1738	0.1067	1.3752	4.0400e-003	0.4107	2.5600e-003	0.4133	0.1090	2.3600e-003	0.1113		403.0032	403.0032	9.8600e-003		403.2498

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0380		0.0621	0.0621		0.0621	0.0621	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	0.4656	2.0175	20.8690	0.0380	8.1298	0.0621	8.1919	4.4688	0.0621	4.5309	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1738	0.1067	1.3752	4.0400e-003	0.4107	2.5600e-003	0.4133	0.1090	2.3600e-003	0.1113		403.0032	403.0032	9.8600e-003		403.2498
Total	0.1738	0.1067	1.3752	4.0400e-003	0.4107	2.5600e-003	0.4133	0.1090	2.3600e-003	0.1113		403.0032	403.0032	9.8600e-003		403.2498

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2066	0.0000	6.2066	3.3346	0.0000	3.3346			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	4.4501	50.1975	31.9583	0.0620	6.2066	2.1739	8.3805	3.3346	2.0000	5.3346		6,005.8653	6,005.8653	1.9424		6,054.4257

Unmitigated Construction Off-Site

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

Hauling	0.9706	36.9409	6.8097	0.0876	1.7049	0.0957	1.8006	0.4675	0.0916	0.5590		9,346.5566	9,346.5566	0.4959		9,358.9531
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1738	0.1067	1.3752	4.0400e-003	0.4107	2.5600e-003	0.4133	0.1090	2.3600e-003	0.1113		403.0032	403.0032	9.8600e-003		403.2498
Total	1.1444	37.0476	8.1848	0.0917	2.1156	0.0983	2.2139	0.5764	0.0940	0.6704		9,749.5598	9,749.5598	0.5057		9,762.2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7930	0.0000	2.7930	1.5006	0.0000	1.5006			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0620		0.1015	0.1015		0.1015	0.1015	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	0.7616	3.3000	32.9991	0.0620	2.7930	0.1015	2.8945	1.5006	0.1015	1.6021	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9706	36.9409	6.8097	0.0876	1.7049	0.0957	1.8006	0.4675	0.0916	0.5590		9,346.5566	9,346.5566	0.4959		9,358.9531
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1738	0.1067	1.3752	4.0400e-003	0.4107	2.5600e-003	0.4133	0.1090	2.3600e-003	0.1113		403.0032	403.0032	9.8600e-003		403.2498
Total	1.1444	37.0476	8.1848	0.0917	2.1156	0.0983	2.2139	0.5764	0.0940	0.6704		9,749.5598	9,749.5598	0.5057		9,762.2029

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0777	2.2491	0.5696	5.5100e-003	0.1354	0.0112	0.1466	0.0390	0.0107	0.0497		582.5978	582.5978	0.0256		583.2367
Worker	0.5909	0.3628	4.6756	0.0138	1.3965	8.7100e-003	1.4052	0.3704	8.0200e-003	0.3784		1,370.2109	1,370.2109	0.0335		1,371.0492
Total	0.6686	2.6119	5.2452	0.0193	1.5319	0.0199	1.5518	0.4094	0.0187	0.4281		1,952.8086	1,952.8086	0.0591		1,954.2859

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0777	2.2491	0.5696	5.5100e-003	0.1354	0.0112	0.1466	0.0390	0.0107	0.0497		582.5978	582.5978	0.0256		583.2367
Worker	0.5909	0.3628	4.6756	0.0138	1.3965	8.7100e-003	1.4052	0.3704	8.0200e-003	0.3784		1,370.2109	1,370.2109	0.0335		1,371.0492
Total	0.6686	2.6119	5.2452	0.0193	1.5319	0.0199	1.5518	0.4094	0.0187	0.4281		1,952.8086	1,952.8086	0.0591		1,954.2859

3.5 Building Construction - 2021

Unmitigated Construction On-Site

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

Total	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0638	2.0332	0.5124	5.4600e-003	0.1354	4.5000e-003	0.1399	0.0390	4.3000e-003	0.0433		577.2385	577.2385	0.0241		577.8399
Worker	0.5474	0.3244	4.2840	0.0133	1.3965	8.4900e-003	1.4050	0.3704	7.8100e-003	0.3782		1,322.6185	1,322.6185	0.0301		1,323.3697
Total	0.6112	2.3575	4.7964	0.0187	1.5319	0.0130	1.5449	0.4094	0.0121	0.4215		1,899.8570	1,899.8570	0.0541		1,901.2097

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0638	2.0332	0.5124	5.4600e-003	0.1354	4.5000e-003	0.1399	0.0390	4.3000e-003	0.0433		577.2385	577.2385	0.0241		577.8399
Worker	0.5474	0.3244	4.2840	0.0133	1.3965	8.4900e-003	1.4050	0.3704	7.8100e-003	0.3782		1,322.6185	1,322.6185	0.0301		1,323.3697
Total	0.6112	2.3575	4.7964	0.0187	1.5319	0.0130	1.5449	0.4094	0.0121	0.4215		1,899.8570	1,899.8570	0.0541		1,901.2097

3.5 Building Construction - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0595	1.9233	0.4826	5.4000e-003	0.1354	3.9100e-003	0.1393	0.0390	3.7300e-003	0.0427		571.7560	571.7560	0.0230		572.3305
Worker	0.5101	0.2911	3.9476	0.0128	1.3965	8.3000e-003	1.4048	0.3704	7.6400e-003	0.3781		1,274.5253	1,274.5253	0.0270		1,275.2000
Total	0.5696	2.2144	4.4302	0.0182	1.5319	0.0122	1.5441	0.4094	0.0114	0.4208		1,846.2814	1,846.2814	0.0500		1,847.5305

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0595	1.9233	0.4826	5.4000e-003	0.1354	3.9100e-003	0.1393	0.0390	3.7300e-003	0.0427		571.7560	571.7560	0.0230		572.3305
Worker	0.5101	0.2911	3.9476	0.0128	1.3965	8.3000e-003	1.4048	0.3704	7.6400e-003	0.3781		1,274.5253	1,274.5253	0.0270		1,275.2000
Total	0.5696	2.2144	4.4302	0.0182	1.5319	0.0122	1.5441	0.4094	0.0114	0.4208		1,846.2814	1,846.2814	0.0500		1,847.5305

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0900	0.0514	0.6966	2.2600e-003	0.2464	1.4600e-003	0.2479	0.0654	1.3500e-003	0.0667		224.9162	224.9162	4.7600e-003		225.0353
Total	0.0900	0.0514	0.6966	2.2600e-003	0.2464	1.4600e-003	0.2479	0.0654	1.3500e-003	0.0667		224.9162	224.9162	4.7600e-003		225.0353

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0900	0.0514	0.6966	2.2600e-003	0.2464	1.4600e-003	0.2479	0.0654	1.3500e-003	0.0667		224.9162	224.9162	4.7600e-003		225.0353
Total	0.0900	0.0514	0.6966	2.2600e-003	0.2464	1.4600e-003	0.2479	0.0654	1.3500e-003	0.0667		224.9162	224.9162	4.7600e-003		225.0353

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.1627					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	45.3673	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2101	0.1199	1.6255	5.2600e-003	0.5750	3.4200e-003	0.5785	0.1525	3.1500e-003	0.1557		524.8046	524.8046	0.0111		525.0824
Total	0.2101	0.1199	1.6255	5.2600e-003	0.5750	3.4200e-003	0.5785	0.1525	3.1500e-003	0.1557		524.8046	524.8046	0.0111		525.0824

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.1627					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	45.1924	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2101	0.1199	1.6255	5.2600e-003	0.5750	3.4200e-003	0.5785	0.1525	3.1500e-003	0.1557		524.8046	524.8046	0.0111		525.0824
Total	0.2101	0.1199	1.6255	5.2600e-003	0.5750	3.4200e-003	0.5785	0.1525	3.1500e-003	0.1557		524.8046	524.8046	0.0111		525.0824

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7921	6.4012	19.0420	0.0664	5.9799	0.0531	6.0330	1.5962	0.0496	1.6458		6,703.1868	6,703.1868	0.2163		6,708.5943
Unmitigated	1.7921	6.4012	19.0420	0.0664	5.9799	0.0531	6.0330	1.5962	0.0496	1.6458		6,703.1868	6,703.1868	0.2163		6,708.5943

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Apartments Mid Rise	1,224.00	1,224.00	1224.00	2,826,959	2,826,959
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	1,224.00	1,224.00	1,224.00	2,826,959	2,826,959

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740
Enclosed Parking with Elevator	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740
Other Asphalt Surfaces	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0574	0.4908	0.2089	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.5516	626.5516	0.0120	0.0115	630.2749

NaturalGas Unmitigated	0.0574	0.4908	0.2089	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.5516	626.5516	0.0120	0.0115	630.2749
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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5325.69	0.0574	0.4908	0.2089	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.5516	626.5516	0.0120	0.0115	630.2749
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0574	0.4908	0.2089	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.5516	626.5516	0.0120	0.0115	630.2749

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.32569	0.0574	0.4908	0.2089	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.5516	626.5516	0.0120	0.0115	630.2749
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0574	0.4908	0.2089	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.5516	626.5516	0.0120	0.0115	630.2749

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7844	1.6082	19.2219	9.8800e-003		0.2155	0.2155		0.2155	0.2155	0.0000	1,812.3466	1,812.3466	0.0666	0.0326	1,823.7300
Unmitigated	2.7844	1.6082	19.2219	9.8800e-003		0.2155	0.2155		0.2155	0.2155	0.0000	1,812.3466	1,812.3466	0.0666	0.0326	1,823.7300

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3217					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1631	1.3934	0.5929	8.8900e-003		0.1127	0.1127		0.1127	0.1127	0.0000	1,778.8235	1,778.8235	0.0341	0.0326	1,789.3942
Landscaping	0.5656	0.2147	18.6289	9.8000e-004		0.1028	0.1028		0.1028	0.1028		33.5231	33.5231	0.0325		34.3358
Total	2.7844	1.6082	19.2219	9.8700e-003		0.2155	0.2155		0.2155	0.2155	0.0000	1,812.3466	1,812.3466	0.0666	0.0326	1,823.7300

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3217					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1631	1.3934	0.5929	8.8900e-003		0.1127	0.1127		0.1127	0.1127	0.0000	1,778.8235	1,778.8235	0.0341	0.0326	1,789.3942
Landscaping	0.5656	0.2147	18.6289	9.8000e-004		0.1028	0.1028		0.1028	0.1028		33.5231	33.5231	0.0325		34.3358
Total	2.7844	1.6082	19.2219	9.8700e-003		0.2155	0.2155		0.2155	0.2155	0.0000	1,812.3466	1,812.3466	0.0666	0.0326	1,823.7300

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Health Risk Assessment Methodology and Calculations

The AERMOD model is a steady-state Gaussian plume model that was developed by EPA for estimating ground-level impacts from point, area, and fugitive sources in simple and complex terrain. Dispersion models such as AERMOD require local meteorological parameters such as wind speed, stability class, mixing height, and temperature. Hourly meteorological data previously developed by CARB from San Jose International Airport covering a 5-year period from 2009 through 2013 were used in the analysis. Construction activities were modeled to occur Monday through Friday between 8 a.m. and 5 p.m. throughout the year.

The OEHHA-recommended range for analyzing the inhalation pathway is 0 to 1.8 meters. For the Project, all receptors were modeled at 0 meters. Receptors were placed at all residences within 1,000 feet of the Project site, at the Monticello Academy, and at Homeridge Park. Onsite construction exhaust and dust emissions for the Project were characterized as area sources (AREAPOLY) with a release height of 4.1 meters (13.5 feet) and 0.9 meters (3.0 feet), respectively. Offsite construction exhaust and dust emissions were characterized as line/area sources (LINEAREA) with a release height of 3.4 meters (10.7 feet) and 0.9 meters (3.0 feet), respectively. The urban dispersion option with an elevation of 0 meters was used for this location. All other AERMOD inputs are considered regulatory defaults.

The risk calculations incorporate OEHHA's recent guidance update, which now includes age-specific factors that take into account increased sensitivity to carcinogens during early-in-life exposure. The approach to estimating cancer risk from long-term inhalation, with exposure to carcinogens, requires calculating a range of potential doses and multiplying by cancer potency factors in units corresponding to the inverse dose to obtain a range of cancer risks. For cancer risk, the risk for each age group is calculated using the appropriate daily breathing rates, age sensitivity factors, and exposure duration. The cancer risks calculated for individual age groups are summed to estimate the cancer risk for each receptor. For the residential receptors, an age-specific sensitivity factor for the maximally exposed individual aged 0 to 2 was conservatively assumed, consistent with OEHHA and BAAQMD recommendations.

Health Risk - Dose and Risk Factors and Values

Dose factors

$$\text{Dose-air} = C_{\text{air}} \times (\text{BR/BW}) \times A \times \text{EF} \times 10^{-6}$$

$$\text{Dose-air} = (C_{\text{air}} \times \text{WAF}) \times (\text{BR/BW}) \times A \times \text{EF} \times 10^{-6}$$

		3rd trimester	0<2	2<9	2<16	16<30	16-70	source
Daily Breath Rate (BR/BW) (L/kg-day)	Residential	361	1090	631	572	261	233	OEHHA 2015, Table 5.6, 95th %ile for 3rdtri-2yrs old; 80th for other age groups
	Recreational	240	1200	640	520	240	230	OEHHA 2015, Table 5.8 (95th, moderate) for all bins but 3rd tri, which was taken from SJVAPCD's draft guidance
	School	240	1200	640	520	240	230	SJVAPCD for 3rd tri; 95th percentile for all
A		1	1	1	1	1	1	OEHHA 2015, page 5-24
EF, Exposure frequency (unitless), days/365 days	Residential	0.96	0.96	0.96	0.96	0.96	0.96	OEHHA 2015, page 5-24, 350 days/yr
	Recreational	0.036	0.036	0.036	0.036	0.036	0.036	3x/week, 2 hours/day, for 9 years
	School	0.12	0.12	0.12	0.12	0.12	0.12	180 days/yr, 6 hours/day (BAAQMD 2016)
Conversion Factor		1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	(mg/ug + m3/L)

Risk Factors

$$\text{RISK}_{\text{inh-res}} = \text{DOSE}_{\text{air}} \times \text{CPF} \times \text{ASF} \times \text{ED/AT} \times \text{FAH}$$

		3rd trimester	0<2	2<9	2<16	16<30	16-70	source
CPF, DPM ([mg/kg-day] ⁻¹)		1.1	1.1	1.1	1.1	1.1	1.1	OEHHA 2015, Table 7.1
Average Age Sensitivity Factor		10	10	3	3	1	1	OEHHA 2015, Table 8.3
AT, Average Time (days)		70	70	70	70	70	70	Averaging time for lifetime cancer risk
								OEHHA 2015, Table 8.4: Use FAH = 1 if a school is within the 1×10-6 (or greater) cancer risk isopleth
FAH		0.85	0.85	0.72	0.72	0.73	0.73	
ED, Exposure Duration (years)		0.25	2	7	14	14	54	Equation 8.2.4 A, OEHHA 2015
Adjustment Factor	Residential	1.00	1.00	1.00	1.00	1.00	1.00	OEHHA 2015, Page 4-44 and Equation 4.1; exposure is adjusted upward to account for overlapping daytime exposure.
	Recreational	3.36	3.36	3.36	3.36	3.36	3.36	
	School	3.36	3.36	3.36	3.36	3.36	3.36	

Hazard Index

Chronic Inhalation Reference Exposure Level, respiratory, DPM	5	OEHHA 2015, Table 6.3
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Averagin Period (AVE)	Receptor ID	X	Y	concat	DPM Concentration (AVERAGE CONC) [ug/m^3]	PM2.5 Concentration (AVERAGE CONC) [ug/m^3]	Source Group (GRP)
ANNUAL	Res_Highest	589945.71	4132862.2	Res_Highest0_2	0.02604	0.20308	0_2
ANNUAL	Res_2ndHighest	589946.38	4132880.2	Res_2ndHighest0_2	0.02568	0.19986	0_2
ANNUAL	Res_3rdHighest	589945.71	4132901.4	Res_3rdHighest0_2	0.02514	0.19717	0_2

Source Inputs	
County of Santa Clara Population	1,938,000
receptor height (m)	0
met from San Jose Intl Airport (2009-2014)	
PM2.5 = DPM	

[illegible]

ONSITE															
Phase	Start date	End date	days	Days in Bin per OEHHA			g/day	total g			g/sec			g/sec-m2	
				3rd tri	0<2	2-9		3rd tri	0<2	2-9	3rd tri	0<2	2-9	3rd tri	0<2
Demolition	7/31/2020	9/4/2020	26		26		76		1987		0.00236			0.00000006	
Site Preparation	9/5/2020	9/23/2020	13		13		2031		26399		0.06268			0.00000154	
Grading	9/24/2020	11/17/2020	39		39		682		26581		0.02104			0.00000052	
Building Construction	11/18/2020	6/1/2022	401		401		0		0		0.00000			0.00000000	
Paving	6/2/2022	6/23/2022	16		16		0		0		0.00000			0.00000000	
Architectural Coating	6/24/2022	7/29/2022	26		26		0		0		0.00000			0.00000000	
Total				0	521	0		0	54966	0	#DIV/0!	0.00326	#DIV/0!	#DIV/0!	0.00000008
			max per oehha	91	730	2555									
			range of days	7/31/2020	7/31/2020	7/3/2022									
				10/30/2020	7/31/2022	7/1/2029									
				91	730	2555									

ONROAD									
Total trips in Caleemod			caleemod trip length			Caleemod	Aermod		
Phase	vendor	worker	haul	vendor	worker	haul	avg trip length	avg trip length	VMT scalar
Demolition		1040	600		10.8	10	10.5	0.564142731	0.054
Site Preparation		650			10.8		10.8	0.564142731	0.052
Grading		1950	7600		10.8	10	10.2	0.564142731	0.056
Building Construction	8020	68170		7.3	10.8		10.4	0.564142731	0.054
Paving		480			10.8		10.8	0.564142731	0.052
Architectural Coating		1820			10.8		10.8	0.564142731	0.052

<-- using this to scale onroad PM2.5 Dust for each phase

Phase	6/2/2022	6/23/2022	days	Days in Bin per OEHHA			g/day, caleemod	g/day, aermod	total g			g/sec			g/sec-m2 3rd tri
				3rd tri	0<2	2-9			3rd tri	0<2	2-9	3rd tri	0<2	2-9	
Demolition	7/31/2020	9/4/2020	26		26		62.805	3.372		88			0.00010		
Site Preparation	9/5/2020	9/23/2020	13		13		48.151	2.515		33			0.00008		
Grading	9/24/2020	11/17/2020	39		39		253.547	14.074		549			0.00043		
Building Construction	11/18/2020	6/1/2022	401		401		179.966	9.733		3903			0.00030		
Paving	6/2/2022	6/23/2022	16		16		28.917	1.510		24			0.00005		
Architectural Coating	6/24/2022	7/29/2022	26		26		66.992	3.499		91			0.00011		
Total				0	521	0	640.377	34.703	0	4687	0	#DIV/0!	0.00028	#DIV/0!	#DIV/0!

SUMMARY (g/sec)			
Source	3rd tri	0<2	2-9
ONSITE	#DIV/0!	3.26E-03	#DIV/0!
OFFSITE	#DIV/0!	2.78E-04	#DIV/0!

ASSUMPTIONS			
Areas	onsite 40,708.20	offsite 6355.3	m2
AERMOD segment meters to mile	907.9 0.000621371	meters	

OFFSITE PM2.5 Dust - ONROAD																				
2020					2021					2022					onsite combined			offsite combined		
Start date	End date	Days (2020)	PM2.5 Dust (tons)	PM2.5 (grams)	Start date	End date	Days (2021)	PM2.5 Dust (tons)	PM2.5 (grams)	Start date	End date	Days (2022)	PM2.5 Dust (tons)	PM2.5 (grams)	PM2.5 Ex g	days	g/d	PM2.5 Ex g	days	g/d
7/31/2020	9/4/2020	26	0.00180	1632.933	7/31/2020	9/4/2020	0	0.00000	0.000	7/31/2020	9/4/2020	0	0.00000	0.000	1986.735	26	76.413	1632.933	26	62.805
9/5/2020	9/23/2020	13	0.00069	625.957	9/5/2020	9/23/2020	0	0.00000	0.000	9/5/2020	9/23/2020	0	0.00000	0.000	26399.076	13	2030.698	625.957	13	48.151
9/24/2020	11/17/2020	39	0.01090	9888.314	9/24/2020	11/17/2020	0	0.00000	0.000	9/24/2020	11/17/2020	0	0.00000	0.000	26580.513	39	681.552	9888.314	39	253.547
11/18/2020	6/1/2022	32	0.00635	5760.623	11/18/2020	6/1/2022	261	0.05180	46992.170	11/18/2020	6/1/2022	108	0.02140	19413.753	0.000	401	0.000	72166.546	401	179.966
6/2/2022	6/23/2022	0	0.00000	0.000	6/2/2022	6/23/2022	0	0.00000	0.000	6/2/2022	6/23/2022	16	0.00051	462.664	0.000	16	0.000	462.664	16	28.917
6/24/2022	7/29/2022	0	0.00000	0.000	6/24/2022	7/29/2022	0	0.00000	0.000	6/24/2022	7/29/2022	26	0.00192	1741.795	0.000	26	0.000	1741.795	26	66.992
			0.01974	17907.827				0.05180	46992.170				0.02383	21618.212	54966.323	521	105.502	86518.209	521	166.062

TRUE

qc
seconds016880400

grams#DIV/0!4687.1842
#DIV/0!#DIV/0!
#DIV/0!

[illegible]

ONROAD										
Phase	Total trips in Caleemod			caleemod trip length			Caleemod	Aermod		
	vendor	worker	haul	vendor	worker	haul	avg trip length	avg trip length	VMT scalar	<-- using this to scale onroad PM2.5 Ex for each phase
Demolition		1040	600		10.8	10	10.5	0.564142731	0.054	
Site Preparation		650			10.8		10.8	0.564142731	0.052	
Grading		1950	7600		10.8	10	10.2	0.564142731	0.056	
Building Construction	8020	68170		7.3	10.8		10.4	0.564142731	0.054	
Paving		480			10.8		10.8	0.564142731	0.052	
Architectural Coating		1820			10.8		10.8	0.564142731	0.052	

SUMMARY (g/sec)			
Source	3rd tri	0<2	2-9
ONSITE	#DIV/0!	6.29E-04	#DIV/0!
OFFSITE	#DIV/0!	1.35E-05	#DIV/0!

OFFSITE PM2.5 Ex - ONROAD																				
2020					2021					2022					onsite combined			offsite combined		
Start date	End date	Days (2020)	PM2.5 Ex (tons)	PM2.5 (grams)	Start date	End date	Days (2021)	PM2.5 Ex (tons)	PM2.5 (grams)	Start date	End date	Days (2022)	PM2.5 Ex (tons)	PM2.5 (grams)	PM2.5 Ex g	days	g/d	PM2.5 Ex g	days	g/d
7/31/2020	9/4/2020	26	0.00016	145.150	7/31/2020	9/4/2020	0	0.00000	0.000	7/31/2020	9/4/2020	0	0.00000	0.000	725.748	26	27.913	145.150	26	5.583
9/5/2020	9/23/2020	13	0.00002	18.144	9/5/2020	9/23/2020	0	0.00000	0.000	9/5/2020	9/23/2020	0	0.00000	0.000	362.874	13	27.913	18.144	13	1.396
9/24/2020	11/17/2020	39	0.00186	1687.364	9/24/2020	11/17/2020	0	0.00000	0.000	9/24/2020	11/17/2020	0	0.00000	0.000	1796.226	39	46.057	1687.364	39	43.266
11/18/2020	6/1/2022	32	0.00030	272.155	11/18/2020	6/1/2022	261	0.00159	1442.424	11/18/2020	6/1/2022	108	0.00061	553.383	7411.699	401	18.483	2267.962	401	5.656
6/2/2022	6/23/2022	0	0.00000	0.000	6/2/2022	6/23/2022	0	0.00000	0.000	6/2/2022	6/23/2022	16	0.00001	9.072	272.155	16	17.010	9.072	16	0.567
6/24/2022	7/29/2022	0	0.00000	0.000	6/24/2022	7/29/2022	0	0.00000	0.000	6/24/2022	7/29/2022	26	0.00004	36.287	45.359	26	1.745	36.287	26	1.396
			0.00234	2122.812				0.00159	1442.424				0.00066	598.742	10614.061	521	20.372	4163.978	521	7.992

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SUMMARY OF DPM

[illegible]

ONSITE

Phase	Start date	End date	days	Days in Bin per OEHHH			g/day	total g			g/sec			g/sec-m2	
				3rd tri	0<2	2-9		3rd tri	0<2	2-9	3rd tri	0<2	2-9	3rd tri	0<2
Demolition	7/31/2020	9/4/2020	26		26		28		726		0.00086			0.00000002	
Site Preparation	9/5/2020	9/23/2020	13		13		28		363		0.00086			0.00000002	
Grading	9/24/2020	11/17/2020	39		39		46		1796		0.00142			0.00000003	
Building Construction	11/18/2020	6/1/2022	401		401		18		7412		0.00057			0.00000001	
Paving	6/2/2022	6/23/2022	16		16		17		272		0.00052			0.00000001	
Architectural Coating	6/24/2022	7/29/2022	26		26		2		45		0.00005			0.00000000	
Total				0	521	0		0	10614	0	#DIV/0!	0.00063	#DIV/0!	#DIV/0!	0.00000002
			max per oehha	91	730	2555									
			range of days	7/31/2020	7/31/2020	7/3/2022									
				10/30/2020	7/31/2022	7/1/2029									
				91	730	2555									

ONROAD

Phase	Total trips in Caleemod		caleemd trip length		Caleemod	Aermod	VMT scalar	<-- using this to scale onroad DPM for each phase
	vendor	haul	vendor	haul	avg trip length	avg trip length		
Demolition	0	600		10	10.0	0.564142731	0.056	
Site Preparation	0	0						
Grading	0	7600		10	10.0	0.564142731	0.056	
Building Construction	8020	0	7.3		7.3	0.564142731	0.077	
Paving	0	0						
Architectural Coating	0	0						

Phase	6/2/2022	6/23/2022	days	Days in Bin per OEHHH			g/day, caeelmod	g/day, aermod	total g			g/sec			g/sec-m2 3rd tri
				3rd tri	0<2	2-9			3rd tri	0<2	2-9	3rd tri	0<2	2-9	
Demolition	7/31/2020	9/4/2020	26		26		4.885	0.276		7		0.00001			
Site Preparation	9/5/2020	9/23/2020	13		13		0.000	0.000		0		0.00000			
Grading	9/24/2020	11/17/2020	39		39		42.103	2.375		93		0.00007			
Building Construction	11/18/2020	6/1/2022	401		401		2.127	0.164		66		0.00001			
Paving	6/2/2022	6/23/2022	16		16		0.000	0.000		0		0.00000			
Architectural Coating	6/24/2022	7/29/2022	26		26		0.000	0.000		0		0.00000			
Total				0	521	0	49.114	2.815	0	166	0	#DIV/0!	0.00001	#DIV/0!	#DIV/0!

SUMMARY (g/sec)

Source	3rd tri	0<2	2-9
ONSITE	#DIV/0!	6.29E-04	#DIV/0!
OFFSITE	#DIV/0!	9.82E-06	#DIV/0!

ASSUMPTIONS

Areas	onsite 40,708.20	offsite 6355.3	m2
AERMOD segment meters to mile	907.9 0.000621371	meters	

OFFSITE DPM - ONROAD TRUCKS																				
2020					2021					2022					onsite combined			offsite combined		
Start date	End date	Days (2020)	DPM (tons)	DPM (grams)	Start date	End date	Days (2021)	DPM (tons)	DPM (grams)	Start date	End date	Days (2022)	DPM (tons)	DPM (grams)	DPM g	days	g/d	DPM g	days	g/d
7/31/2020	9/4/2020	26	0.00014	127.006	7/31/2020	9/4/2020	0	0.00000	0.000	7/31/2020	9/4/2020	0	0.00000	0.000	725.748	26	27.913	127.006	26	4.885
9/5/2020	9/23/2020	13	0.00000	0.000	9/5/2020	9/23/2020	0	0.00000	0.000	9/5/2020	9/23/2020	0	0.00000	0.000	362.874	13	27.913	0.000	13	0.000
9/24/2020	11/17/2020	39	0.00181	1642.004	9/24/2020	11/17/2020	0	0.00000	0.000	9/24/2020	11/17/2020	0	0.00000	0.000	1796.226	39	46.057	1642.004	39	42.103
11/18/2020	6/1/2022	32	0.00017	154.221	11/18/2020	6/1/2022	261	0.00057	517.095	11/18/2020	6/1/2022	108	0.00020	181.437	7411.699	401	18.483	852.754	401	2.127
6/2/2022	6/23/2022	0	0.00000	0.000	6/2/2022	6/23/2022	0	0.00000	0.000	6/2/2022	6/23/2022	16	0.00000	0.000	272.155	16	17.010	0.000	16	0.000
6/24/2022	7/29/2022	0	0.00000	0.000	6/24/2022	7/29/2022	0	0.00000	0.000	6/24/2022	7/29/2022	26	0.00000	0.000	45.359	26	1.745	0.000	26	0.000
			0.00212	1923.232				0.00057	517.095				0.00020	181.437	10614.061	521	20.372	2621.764	521	5.032

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Summary of Mitigated Cancer and Noncancer Health Risks and PM2.5 Concentrations for the Top 3 MEIs

Receptors					Concentration ug/m3			Dose Inhalation by Bin			Cancer Risk by Bin			Sum of Cancer Risk		Chronic HI (max annual)	Max PM2.5 (ug/m3)
Rec ID	Detail	X	Y	Type	3RDTRI	0_2	2_9	3RDTRI	0_2	2_9	3RDTRI	0_2	2_9	Summed Risk	Cases Per Million		
Res_Highest	Residence	589945.71	4132862.2	Residential	0.00E+00	2.60E-02	0.00E+00	0.0E+00	2.7E-05	0.0E+00	0.0E+00	7.3E-06	0.0E+00	7E-06	7.27	0.01	0.20
Res_2ndHighest	Residence	589946.38	4132880.2	Residential	0.00E+00	2.57E-02	0.00E+00	0.0E+00	2.7E-05	0.0E+00	0.0E+00	7.2E-06	0.0E+00	7E-06	7.17	0.01	0.20
Res_3rdHighest	Residence	589945.71	4132901.4	Residential	0.00E+00	2.51E-02	0.00E+00	0.0E+00	2.6E-05	0.0E+00	0.0E+00	7.0E-06	0.0E+00	7E-06	7.02	0.01	0.20

0

$$Dose_{air} = C_{air} \times \{BR/BW\} \times A \times EF \times 10^{-6}$$

$$RISK_{inh-res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$$

Summary of Unmitigated Cancer and Noncancer Health Risks and PM2.5 Concentrations for the Top 3 MEIs

Receptors					Concentration ug/m3			Dose Inhalation by Bin			Cancer Risk by Bin			Sum of Cancer Risk		Chronic HI (max annual)	Max PM2.5 Ex (ug/m3)
Rec ID	Detail	X	Y	Type	3RDTRI	0_2	2_9	3RDTRI	0_2	2_9	3RDTRI	0_2	2_9	Summed Risk	Cases Per Million		
Res_Highest	Residence	589945.71	4132862.2	Residential	0	0.02604	0	0	2.72172E-05	0	0	7.27087E-06	0	7E-06	114.79	0.08	0.57
Res_2ndHighest	Residence	589946.38	4132880.2	Residential	0	0.02568	0	0	2.68409E-05	0	0	7.17035E-06	0	7E-06	113.20	0.08	0.57
Res_3rdHighest	Residence	589945.71	4132901.4	Residential	0	0.02514	0	0	2.62765E-05	0	0	7.01957E-06	0	7E-06	110.82	0.08	0.56

0

Dose_{air} = C_{air} × {BR/BW} × A × EF × 10⁻⁶

RISK_{inh-res} = DOSE_{air} × CPF × ASF × ED/AT × FAH

Unmitigated Total PM2.5 Exhaust

0.2575

Unmitigated Total PM2.5

0.4874

Mitigated Total PM2.5 Exhaust

1.63E-02

Mitigated Total PM2.5

0.1722

Ratio of Unmitigated to Mitigated PM2.5 Exhaust

15.79

Ratio of Unmitigated to Mitigated Total PM2.5

2.83

AERMOD Output Available Upon Request

Appendix B

Arborist Report



Arborist Report

**Laguna Clara
Santa Clara, CA**

**PREPARED FOR
Kier & Wright
2850 Collier Canyon Road
Livermore, CA 94551**

**PREPARED BY:
HortScience | Bartlett Consulting
325 Ray St.
Pleasanton, CA 94566**

July 24, 2018

**Arborist Report
Laguna Clara
Santa Clara, CA**

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Exhibits

Tree Assessment Plan
Tree Assessment
Tree Disposition

Arborist Report

Laguna Clara

Santa Clara, CA

Executive Summary

Kier and Wright is planning to re-develop part of the Laguna Clara property in Santa Clara, CA. Trees were assessed on June 14, 2018. The assessment included all trees 6" and greater in diameter, located within and adjacent to the project area.

Two hundred seventeen (217) trees representing 24 species were evaluated (Table 1). For all species combined, trees were in fair condition (64%) with 20% of trees in poor condition and 16% of trees in good condition. One street tree (#15) was included in the assessment, and no off-site trees had canopies over the project area.

The City of Santa Clara protects cedars, redwoods, oaks, olive, bay laurel and pepper trees of any size and all other trees 12" and greater in diameter (General Plan 5.10.1-P4). Based on this definition, 138 *Protected* trees were included in this assessment. These trees cannot be removed without a permit.

Based on my evaluation of the plans:

- One hundred seventy-one (171) trees will be removed (105 *Protected* including one street tree).
- Forty-six (46) trees will be preserved (33 *Protected*).

All trees within the Project Area of Phase 1 will be removed except for Mexican fan palm #101. This tree is in good health and away from construction impacts. Three trees outside of this limit are planned for removal: #15, 137 and 142. Tree #15 is a street tree adjacent to a bioretention basin. Trees #137 and 142 are declining and near the limits of construction. I recommend removing them rather than protecting declining trees. Impacts to trees being preserved can be minimized by following the **Tree Preservation Guidelines**.

Introduction and Overview

Kier and Wright is planning to re-develop part of the Laguna Clara property in Santa Clara, CA. Currently the project area consists of an apartment complex with associated parking lots and landscapes. HortScience | Bartlett Consulting was asked to prepare an **Arborist Report** for the site as part of the application to the City of Santa Clara.

This report provides the following information:

1. Assessment of the health and structural condition of the trees within the proposed project area based on a visual inspection from the ground.
2. Evaluation of the impacts to trees based on development plans.
3. Guidelines for tree preservation during the design, construction and maintenance phases of development.

Tree Assessment Methods

Trees were assessed on June 14, 2018. The assessment included all trees 6" and greater in diameter, located within and adjacent to the project area. Off-site trees with canopies extending over the property line were included in the assessment and viewed from the subject property. The assessment procedure consisted of the following steps:

1. Identifying the tree as to species;

2. Tagging each tree with an identifying number and recording its location on a map; off-site trees were not tagged;
3. Measuring the trunk diameter at a point 48" above grade; for off-site trees diameters were estimated.
4. Evaluating the health and structural condition using a scale of 1 – 5 based on a visual inspection from the ground:
 - 5 - A healthy, vigorous tree, reasonably free of signs and symptom of disease, with good structure and form typical of the species.
 - 4 - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
 - 3 - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
 - 2 - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
 - 1 - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the health, age and structural condition of the tree, and its potential to remain an asset to the site for years to come.

High: Trees with good health and structural stability that have the potential for longevity at the site.

Moderate: Trees with somewhat declining health and/or structural defects that can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'high' category.

Low: Tree in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual may have characteristics that are undesirable for landscapes and generally are unsuited for use areas.

Description of Trees

Two hundred seventeen (217) trees representing 24 species were evaluated (Table 1). For all species combined, trees were in fair condition (64%) with 20% of trees in poor condition and 16% of trees in good condition. One street tree (#15) was included in the assessment, and no off-site trees had canopies over the project area. Descriptions of each tree are found in the **Tree Assessment**, and approximate locations are plotted on the **Tree Assessment Plan** (see Exhibits).

The most common species assessed was African fern-pine (62 trees, 39% of the population). The fern pines were in fair condition (46 trees) with 10 trees in good condition and six in poor condition. The fern-pines ranged from young (9" in trunk diameter) to mature (31" in trunk diameter) with an average trunk diameter of 18". Many of the African fern-pines were growing in narrow spaces near buildings and had large crowns extending over the roofs (Photo 1). Several of the trees were female, leaving messy fruit below the trees.

**Table 1. Condition ratings and frequency of occurrence of trees
Laguna Clara, Santa Clara, CA**

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
Trident maple	<i>Acer buergeranum</i>	-	3	1	4
Japanese maple	<i>Acer palmatum</i>	-	3	-	3
African fern-pine	<i>Afrocarpus falcatus</i>	6	46	10	62
Italian alder	<i>Alnus cordata</i>	-	5	1	6
European white birch	<i>Betula pendula</i>	15	30	-	45
Flame tree	<i>Brachychiton acerifolius</i>	-	2	1	3
Deodar cedar	<i>Cedrus deodara</i>	-	-	1	1
Camphor	<i>Cinnamomum camphora</i>	2	5	-	7
Dracaena palm	<i>Cordyline australis</i>	1	1	-	2
Flowering dogwood	<i>Cornus florida</i>	-	1	-	1
Hollywood juniper	<i>Juniperus chinensis</i> 'Kaizuka'	-	2	-	2
Sweetgum	<i>Liquidambar styraciflua</i>	1	8	5	14
Avocado	<i>Persea americana</i>	-	-	1	1
Canary Island date palm	<i>Phoenix canariensis</i>	-	-	2	2
Monterey pine	<i>Pinus radiata</i>	6	8	-	14
Victorian box	<i>Pittosporus undulatum</i>	7	5	-	12
Carolina cherry laurel	<i>Prunus caroliniana</i>	4	11	1	16
Purpleleaf plum	<i>Prunus cerasifera</i>	-	1	-	1
Coast live oak	<i>Quercus agrifolia</i>	-	1	2	3
Black locust	<i>Robinia pseudoacacia</i>	-	-	1	1
Coast redwood	<i>Sequoia sempervirens</i>	1	5	1	7
Chinese elm	<i>Ulmus parvifolia</i>	1	-	-	1
Siberian elm	<i>Ulmus pumila</i>	-	2	1	3
Mexican fan palm	<i>Washingtonia robusta</i>	-	-	6	6
Total		44	139	34	217

Forty-five (45) European white birch trees were assessed (21% of the population). The birches were in fair (30 trees) to poor (15 trees) condition with no birches in good condition. The birches were relatively young to semi-mature with trunk diameters ranging between 5 and 14" (8" average). Many of the birches were planted in the interior of the site, especially around water features (Photo 2)

Sixteen (16) Carolina cherry laurel trees were assessed (7% of the population). The laurels were in fair condition (11 trees) with four trees in poor condition and one tree in good condition. They ranged from young trees (6" in trunk diameter) to relatively mature trees (16" trunk diameter) with an average trunk diameter of 9".

Fourteen (14) Monterey pines were assessed (6% of the population). The pines were in fair (8 trees) to poor (6 trees) condition with no trees in good condition. They were semi-mature (19" trunk diameter) to mature (35" trunk diameter) with an average trunk diameter of 27". The majority of the pines had pine pitch canker, red turpentine beetle, or both.

Fourteen (14) sweetgums were assessed (6% of the population). They were in fair (8 trees) to good (5 trees) condition with one tree in poor condition. The sweetgums ranged from young (8" trunk diameter) to mature (22" trunk diameter) with an average trunk diameter of 14".

Twelve Victorian boxes were assessed (6% of the population). They were in poor (7 trees) to fair (5 trees) condition with no trees in good condition. They ranged from semi-mature trees (10" trunk diameter) to mature trees (20" trunk diameter) with an average trunk diameter of 15". The Victorian boxes were generally declining with sparse crowns and structural issues.

Eighteen species collectively made up 25% of the tree population. The most noteworthy of these trees were:

- Deodar cedar #133 was the largest tree assessed with a trunk diameter of 37". It was in good condition with good form and structure (Photo 3).
- Coast redwoods had the largest average diameter of any species (28"). The redwoods were crowded and had significant branch dieback (Photo 4).
- The only species native to the area was coast live oak. Three semi-mature trees were assessed and ranged from good to fair condition.
- Black locust #175 was in good condition and had a 35" trunk diameter.
- Three mature Siberian elms were in good to fair condition.

The City of Santa Clara protects cedars, redwoods, oaks, olive, bay laurel and pepper trees of any size and all other trees 12" and greater in diameter (General Plan 5.10.1-P4). Based on this definition, 138 *Protected* trees were included in this assessment. These trees cannot be removed without a permit.



Photo 1 – Several of the African fern-pines were growing in narrow spaces with crowns extending out over the roofs.



Photo 2 – Many of the European white birches were growing in the interior of the site, especially around water features.



Photo 3 – Deodar cedar #133 was the largest tree assessed with a trunk diameter of 37”.



Photo 4 – The coast redwoods were declining with moderate branch dieback and signs of water stress.

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. For trees growing in open fields, away from areas where people and property are present, structural defects and/or poor health presents a low risk of damage or injury if they fail. However, we must be concerned about safety in use areas. Therefore, where development encroaches into existing plantings, we must consider their structural stability as well as their potential to grow and thrive in a new environment. Where development will not occur, the normal life cycles of decline, structural failure and death should be allowed to continue.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees. For example, European white birch #123 was declining and unlikely to survive regardless of construction impact.
- **Structural integrity**
Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. For example, Monterey pine #134 has large dead branches that may fall.
- **Species response**
There is a wide variation in the response of individual species to construction impacts and changes in the environment. For instance, coast live oaks are more tolerant of root pruning than Monterey pine.
- **Tree age and longevity**
Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.
- **Species invasiveness**
Species that spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database <http://www.cal-ipc.org/plants/inventory/> lists species identified as being invasive. The part of Marin County is part of the Central West Floristic Province. Dracaena palm, purpleleaf plum, black locust, and Canary Island date palms are listed as limited invasiveness, and Mexican fan palm is listed as moderate invasiveness.

Each tree was rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment (see **Tree Assessment** in Exhibits, and Table 2). We consider trees with high suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

**Table 2. Tree suitability for preservation
Laguna Clara, Santa Clara, CA**

High	These are trees with good health and structural stability that have the potential for longevity at the site. Eleven (11) trees had high suitability for preservation.
Moderate	Trees in this category have fair health and/or structural defects that may be abated with treatment. These trees require more intense management and monitoring, and may have shorter life-spans than those in the “high” category. One hundred five (105) trees had moderate suitability for preservation.

(Continued, following page)

**Table 2. Tree suitability for preservation, continued
Laguna Clara, Santa Clara, CA**

Low	Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. One hundred one (101) trees had low suitability for preservation.
------------	--

Evaluation of Impacts and Recommendations

The *Tree Assessment* was the reference point for tree health, condition, and suitability for preservation. I used the *Utility Plan* created by Kier & Wright dated June 2018 to estimate impacts to trees. The plan shows a horizontal line as the Phase 1 Limit. The plans show a nearly complete demolition of the site within Phase 1 and the construction of two large buildings. Surveyed trunk locations were overlaid with development plans.

The disposition of each tree is shown in **Tree Disposition Table** (see Exhibits). Based on my evaluation of the plans:

- One hundred seventy-one (171) trees will be removed (105 *Protected* trees, including street tree #15)
- Forty-six (46) trees will be preserved (33 *Protected*)

The main impacts to trees will be the total demolition and re-development of the site. The existing buildings will be demolished and two new buildings constructed, taking up the majority of the site and directly impacting nearly all of the trees within Phase I. On these types of development projects, the best chance of preserving trees is around the perimeter of the site. Along Quince Avenue and Homestead Road, planting beds and bioretention basins alternate requiring the removal of existing trees. On the eastern perimeter of the property, no development is taking place and trees can be preserved. Most of these trees, however, are in poor condition. I recommend preserving only tree #101 along this property boundary.

All trees within the Phase 1 Project Area will be removed except for Mexican fan palm #101. This tree is in good health and away from construction impacts. Three trees outside of this limit are planned for removal: #15, 137 and 142. Tree #15 is a street tree adjacent to a bioretention basin. Trees #137 and 142 are declining and near the limits of construction. I recommend removing them rather than protecting declining trees. Impacts to trees being preserved can be minimized by following the **Tree Preservation Guidelines** (below).

Tree Preservation Guidelines

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Trees retained on sites that are either subject to extensive injury during construction or are inadequately maintained become a liability rather than an asset. The response of individual trees will depend on the amount of excavation and grading, the care with which demolition is undertaken, and the construction methods. Coordinating any construction activity inside the **TREE PROTECTION ZONE** can minimize these impacts.

The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

Tree Protection Zone

1. **A TREE PROTECTION ZONE** shall be identified for each tree to be preserved. The **TREE PROTECTION ZONE** for each tree shall be the dripline of the tree.

2. Fence all trees to be retained to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link with posts sunk into the ground or equivalent as approved by the City. Tree #101 and trees along the Phase 1 boundary shall be fenced at their dripline. All other trees can be protected by the perimeter fencing separating Phase 1 from future phases.
3. Fences must be installed prior to beginning demolition and must remain until construction is complete.
4. No grading, excavation, construction or storage or dumping of materials shall occur within the **TREE PROTECTION ZONE**.
5. No underground services including utilities, sub-drains, water or sewer shall be placed in the **TREE PROTECTION ZONE**.

Design recommendations

1. Any changes to the plans affecting the trees should be reviewed by the consulting arborist with regard to tree impacts. These include, but are not limited to, site plans, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans, and demolition plans.
2. Plan for tree preservation by designing adequate space around trees to be preserved. This is the **TREE PROTECTION ZONE**: No grading, excavation, construction or storage of materials should occur within that zone. Route underground services including utilities, sub-drains, water or sewer around the **TREE PROTECTION ZONE**.
3. Consider the vertical clearance requirements near trees during design. Avoid designs that would require pruning more than 20% of a tree's canopy.
4. All plans affecting trees shall be reviewed by the Consulting Arborist with regard to tree impacts. These include, but are not limited to, demolition plans, grading plans, drainage plans, utility plans, and landscape and irrigation plans.
5. Irrigation systems must be designed so that no trenching severs roots larger than 1" in diameter will occur within the **TREE PROTECTION ZONE**.
6. **Tree Preservation Guidelines** prepared by the Consulting Arborist, which include specifications for tree protection during demolition and construction, should be included on all plans.
7. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use.
8. Do not lime the subsoil within 50' of any tree. Lime is toxic to tree roots.
9. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement.
10. Ensure adequate but not excessive water is supplied to trees; in most cases occasional irrigation will be required. Avoid directing runoff toward trees.

Pre-demolition and pre-construction treatments and recommendations

1. The demolition and construction superintendents shall meet with the Consulting Arborist before beginning work to review all work procedures, access routes, storage areas, and tree protection measures.

2. Fence all trees to be retained to completely enclose the Tree Protection Zone prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link. Fences are to remain until all grading and construction is completed. The Tree Protection Zones radii are listed in Table 4.
3. Apply and maintain 4-6" wood chip mulch within the **TREE PROTECTION ZONE**. Keep the mulch 2' from the base of tree trunks.
4. Branches extending into the work area that can remain following demolition shall be tied back and protected from damage.
5. Fences are to remain until all grading and construction is completed. Where demolition must occur close to trees, such as removing curb and pavement, install trunk protection devices such as winding silt sock wattling around trunks or stacking hay bales around tree trunks.
6. Prune trees to be preserved to clean the crown of dead branches 1" and larger in diameter, raise canopies as needed for construction activities.
 - a. All pruning shall be done by a State of California Licensed Tree Contractor (C61/D49). All pruning shall be done by Certified Arborist or Certified Tree Worker in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300).
 - b. The Consulting Arborist will provide pruning specifications prior to site demolition.
 - c. Branches extending into the work area that can remain following demolition shall be tied back and protected from damage.
 - d. While in the tree the arborist shall perform an aerial inspection to identify any defects, weak branch and trunk attachments and decay not visible from the ground. Any additional work needed to mitigate defects shall be reported to the property owner.
7. Tree(s) to be removed that have branches extending into the canopy of tree(s) or located within the **TREE PROTECTION ZONE** of tree(s) to remain shall be removed by a Certified Arborist or Certified Tree Worker and not by the demolition contractor. The Certified Arborist or Certified Tree Worker shall remove the trees in a manner that causes no damage to the tree(s) and understory to remain. Stumps shall be ground below grade.
8. Trees to be removed shall be felled so as to fall away from **TREE PROTECTION ZONE** and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the Consulting Arborist may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.
9. All down brush and trees shall be removed from the **TREE PROTECTION ZONE** either by hand, or with equipment sitting outside the **TREE PROTECTION ZONE**. Extraction shall occur by lifting the material out, not by skidding across the ground. Brush shall be chipped and spread beneath the trees within the **TREE PROTECTION ZONE**.
10. Structures and underground features to be removed within the **TREE PROTECTION ZONE** shall use equipment that will minimize damage to trees above and below ground, and operate from outside the **TREE PROTECTION ZONE**. Tie back branches and wrap trunks with protective materials to protect from injury as directed by the Project arborist. The Project arborist shall be on-site during all operations within the **TREE PROTECTION ZONE** to monitor demolition activity.
11. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. To the extent feasible tree pruning and removal should be scheduled outside of the breeding season. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.

Recommendations for tree protection during construction

1. Any approved grading, construction, demolition or other work within the **TREE PROTECTION ZONE** should be monitored by the Consulting Arborist.
2. All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.
3. Tree protection devices are to remain until all site work has been completed within the work area. Fences or other protection devices may not be relocated or removed without permission of the Consulting Arborist.
4. Construction trailers, traffic and storage areas must remain outside **TREE PROTECTION ZONE** at all times.
5. Any root pruning required for construction purposes shall receive the prior approval of and be supervised by the Project Arborist. Roots should be cut with a saw to provide a flat and smooth cut. Removal of roots larger than 2" in diameter should be avoided.
6. If roots 2" and greater in diameter are encountered during site work and must be cut to complete the construction, the Project Arborist must be consulted to evaluate effects on the health and stability of the tree and recommend treatment.
7. Any brush clearing required within the **TREE PROTECTION ZONE** shall be accomplished with hand-operated equipment.
8. All down brush and trees shall be removed from the **TREE PROTECTION ZONE** either by hand, or with equipment sitting outside the **TREE PROTECTION ZONE**. Extraction shall occur by lifting the material out, not by skidding across the ground.
9. Prior to grading or trenching, trees may require root pruning outside the **TREE PROTECTION ZONE**. Any root pruning required for construction purposes shall receive the prior approval of, and be supervised by, the Project Arborist.
10. Spoil from trench, footing, utility or other excavation shall not be placed within the **TREE PROTECTION ZONE**, neither temporarily nor permanently.
11. All grading within the dripline of trees shall be done using the smallest equipment possible. The equipment shall operate perpendicular to the tree and operate from outside the **TREE PROTECTION ZONE**. Any modifications must be approved and monitored by the Consulting Arborist.
12. All trees shall be irrigated on a schedule to be determined by the Consulting Arborist (every 3 to 6 weeks is typical). Each irrigation shall wet the soil within the **TREE PROTECTION ZONE** to a depth of 30".
13. 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.
14. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the **TREE PROTECTION ZONE**.
15. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.
16. Trees that accumulate a sufficient quantity of dust on their leaves, limbs and trunk as judged by the Consulting Arborist shall be spray-washed at the direction of the Project Arborist.

Maintenance of impacted trees

Our procedures included assessing trees for observable defects in structure. This is not to say that trees without significant defects will not fail. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces, for example, can exceed the strength of defect-free wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, reducing their ability to hold roots, and blow over defect-free trees. Although we cannot predict all failures, identifying those trees with observable defects is a critical component of enhancing public safety.

Furthermore, trees change over time. Our inspections represent the condition of the tree at the time of inspection. As trees age, the likelihood of failure of branches or entire trees increases. Annual tree inspections are recommended to identify changes to tree health and structure. In addition, trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Initiating these inspections is the responsibility of the client and/or tree owner.

Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability 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.

If you have any questions about my observations or recommendations, please contact me.

HortScience | Bartlett Consulting



Ryan Gilpin, M.S.
Certified Arborist #WE-10268A



Exhibits

Tree Assessment Map

Tree Assessment

Tree Disposition



Laguna Clara Apartments
3131 Homestead Road
Santa Clara, CA

June 2018



Notes:
Base map provided by:
Kier & Wright
Livermore, CA

Numbered tree locations are approximate.

TS = Too Small (tree less than 4" in diameter)
Not included in this assessment



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Pleasanton, CA 94566
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Tree Assessment

Laguna Clara
Santa Clara, CA
June 2018



Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
1	Monterey pine	22	Yes	3	Low	Leans S.; moderate pine pitch canker; dieback.
2	Monterey pine	21	Yes	2	Low	Extensive dieback; pine pitch canker.
3	Monterey pine	33	Yes	3	Moderate	Good form; codominant trunks in upper crown; dieback & dead wood.
4	Monterey pine	19	Yes	2	Low	Leans S.; dieback; pine pitch canker.
5	Trident maple	14	Yes	3	Moderate	Suppressed; crown one sided SE.
6	Trident maple	10	No	3	Moderate	Suppressed; one sided N.
7	Monterey pine	29	Yes	3	Moderate	Leans S.; dieback in upper crown; lateral SE.
8	African fern-pine	14	Yes	3	Moderate	Suppressed; leans SW.
9	African fern-pine	12	Yes	3	Moderate	Suppressed; leaning & one sided SE.
10	African fern-pine	14	Yes	3	Moderate	Codominant trunks at 8'; suppressed; leans SW.
11	African fern-pine	13	Yes	3	Low	Suppressed; strong lean E. over carport.
12	African fern-pine	19	Yes	4	Moderate	Codominant trunks at 8'; upright form.
13	Trident maple	9	No	3	Moderate	Suppressed; one sided W.; dieback.
14	Trident maple	8	No	4	Moderate	Codominant trunks at 6'; good form; dieback.
15	African fern-pine	31	Yes	4	Moderate	Street tree; multiple attachments at 8'; upright form; displacing sidewalk 7".
16	African fern-pine	16	Yes	3	Moderate	Codominant trunks at 8'; crowded & one sided E.
17	African fern-pine	11	No	3	Moderate	Slight lean & one sided S.
18	African fern-pine	17	Yes	4	High	Multiple attachments at 10'; good form and structure.
19	African fern-pine	13	Yes	3	Moderate	Crowded; one sided S.
20	African fern-pine	18	Yes	3	Moderate	Codominant trunks at 10'; slight lean & one sided S.; pruned away from bldg. N.
21	African fern-pine	19	Yes	3	Moderate	Codominant trunks at 18'; leans S.
23	African fern-pine	25	Yes	3	Moderate	Codominant trunks at 8'; upright form; pruned away from bldg. N.

Tree Assessment

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
24	African fern-pine	21	Yes	3	Moderate	Corrected lean E.; fair structure.
25	African fern-pine	20	Yes	3	Low	Codominant trunks at 8'; suppressed; crown bowed E. over bldg.
26	Monterey pine	31	Yes	2	Low	Leans S.; moderate dieback.
27	African fern-pine	24	Yes	3	Moderate	Codominant trunks at 10'; included bark; upright form.
28	African fern-pine	23	Yes	3	Moderate	Multiple attachments at 10'; included bark; fruit all over sidewalk; displacing sidewalk 5".
29	Japanese maple	13	Yes	3	Moderate	Codominant trunks at 8'; leans W.; dieback.
30	Japanese maple	9	No	3	Moderate	Codominant trunks at 8'; high crown; dieback.
31	Japanese maple	9	No	3	Moderate	Codominant trunks at 10'; asymmetric form; dieback.
32	Victorian box	13,13,9	Yes	2	Low	Multiple attachments at 3'; leans N.; very sparse crown.
33	Carolina cherry laurel	8	No	3	Moderate	Crowded; fair form and structure.
34	Coast redwood	22	Yes	3	Moderate	Crowded; one sided NW.; moderate dieback; displacing sidewalk 5".
35	Coast redwood	23	Yes	3	Moderate	Crowded; one sided S.; moderate dieback.
36	Coast redwood	29	Yes	3	Moderate	Crowded; one sided NE.; moderate dieback; displacing sidewalk 5".
37	Carolina cherry laurel	4,3	No	3	Moderate	Codominant trunks at base; shrub.
38	Carolina cherry laurel	8	No	3	Low	Strong lean S. over pond.
39	Carolina cherry laurel	11	No	3	Moderate	Slight lean S. over pond.
40	Hollywood juniper	11,10	Yes	3	Moderate	Codominant trunks at base; leans S. to pond.
41	European white birch	7	No	2	Low	Strong lean E. over pond; moderate dieback.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
42	European white birch	8	No	2	Low	Strong lean S.; moderate dieback.
43	Coast redwood	34	Yes	4	Moderate	Codominant trunks at 30'; upright form; moderate dieback; displacing pond.
48	Flowering dogwood	7	No	3	Moderate	Codominant trunks at 4'; one sided N.; dieback.
49	Mexican fan palm	19	Yes	5	High	Good form and structure; 30' of brown trunk.
50	Coast redwood	30	Yes	2	Low	Crowded; leans S.; poor form; moderate dieback.
51	Coast redwood	28	Yes	3	Moderate	Crowded; upright form; moderate dieback.
52	Coast redwood	28	Yes	3	Moderate	Crowded; one sided N.; moderate dieback.
53	Purpleleaf plum	18	Yes	3	Moderate	Multiple attachments at 4'; one sided W.; dieback.
55	European white birch	8,7	No	3	Moderate	Codominant trunks at base; dieback.
56	European white birch	6	No	2	Low	Upright form ; dead top.
57	European white birch	6	No	2	Low	Upright form ; dead top.
59	African fern-pine	21	Yes	3	Moderate	Multiple attachments at 20'; pruned W. over bldg.; fruit all over sidewalk.
60	African fern-pine	22	Yes	3	Moderate	Multiple attachments at 18'; one sided E.; fruit all over sidewalk; displacing sidewalk 5".
61	African fern-pine	26	Yes	4	Moderate	Codominant trunks at 8'; one sided S.; fruit all over sidewalk; broken irrigation lines.
62	African fern-pine	13	Yes	3	Low	Crook at 20' over bldg.; one sided NW.
63	African fern-pine	20	Yes	3	Moderate	Codominant trunks at 8'; upright but w/ in 8" of bldg.
64	African fern-pine	19	Yes	3	Moderate	Multiple attachments at 20'; one sided E.; w/ in 12" of bldg.
65	African fern-pine	19	Yes	2	Low	Multiple attachments at 20'; one sided E.; w/ in 18" of bldg.; very sparse crown.
66	African fern-pine	16	Yes	3	Low	Multiple attachments at 10'; one sided S.; sparse crown.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
67	African fern-pine	21	Yes	3	Moderate	Multiple attachments at 10'; upright form; w/ in 10" of bldg.; dieback.
68	African fern-pine	22	Yes	4	Moderate	Multiple attachments at 10'; upright form; w/ in 18" of bldg.; dieback.
69	African fern-pine	20	Yes	3	Low	Multiple attachments at 10'; slight lean S.; w/ in 6" of bldg.; dieback.
70	African fern-pine	12	Yes	3	Low	Trunk sweeps S.; w/ in 18" of bldg.; dieback.
71	African fern-pine	20	Yes	3	Moderate	Multiple attachments at 18'; upright form; w/ in 4" of bldg.; moderate dieback.
72	African fern-pine	21	Yes	4	Moderate	Multiple attachments at 10'; one sided SW.; dieback.
73	African fern-pine	21	Yes	2	Low	Multiple attachments at 18'; upright form; w/ in 4" of bldg.; sparse crown.
74	African fern-pine	16	Yes	2	Low	Multiple attachments at 15'; upright, narrow form; w/ in 6" of bldg.; sparse crown.
75	African fern-pine	25	Yes	3	Moderate	Multiple attachments at 18'; upright form; w/ in 24" of bldg.; a little sparse.
76	African fern-pine	16	Yes	2	Low	Multiple attachments at 15'; leaning & one sided SW.; w/ in 36" of bldg.; sparse crown.
77	African fern-pine	16	Yes	2	Low	Multiple attachments at 20'; upright, narrow. form; w/ in 24" of bldg.; sparse crown.
78	African fern-pine	21	Yes	3	Moderate	Multiple attachments at 20'; upright form; w/ in 6" of bldg.; sparse crown.
79	African fern-pine	18	Yes	2	Low	Codominant trunks at 8'; poor form and structure; sparse crown.
80	African fern-pine	18	Yes	3	Low	Codominant trunks at 8'; leans W.; sparse crown; displacing sidewalk 2".
81	African fern-pine	17	Yes	3	Low	Multiple attachments at 20'; upright form; sparse; displacing sidewalk 2".
82	African fern-pine	15	Yes	3	Moderate	Crowded; poor form; sparse.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
83	African fern-pine	27	Yes	4	Moderate	Multiple attachments at 7'; good form and structure; basal wound S.
84	African fern-pine	17	Yes	3	Moderate	Codominant trunks at 7' & 15'; upright form.
85	African fern-pine	13	Yes	3	Low	Upright; narrow form; poor color; dieback; in 3' wide planter.
86	African fern-pine	11	No	3	Low	Upright; narrow form; poor color; dieback; in 3' wide planter.
87	African fern-pine	9	No	3	Low	Upright; narrow form; poor color; dieback; in 3' wide planter.
88	African fern-pine	9	No	3	Low	Upright; narrow form; poor color; dieback; in 3' wide planter.
89	African fern-pine	14	Yes	3	Low	Upright; narrow form; poor color; dieback; filled 3' wide planter.
90	African fern-pine	13	Yes	3	Low	Crowded; leaning S.; poor color; dieback; in 3' wide planter.
91	African fern-pine	15	Yes	3	Low	Upright; narrow form; poor color; dieback; in 3' wide planter.
92	African fern-pine	15	Yes	3	Low	Upright; narrow form; poor color; dieback; in 3' wide planter.
93	African fern-pine	10	No	3	Low	Crown bowed S.; poor color; dieback; in 3' wide planter.
94	African fern-pine	13	Yes	3	Low	Upright; narrow form; poor color; dieback; in 3' wide planter.
95	African fern-pine	18	Yes	3	Low	Upright; narrow form; poor color; dieback; filled 3' wide planter.
96	African fern-pine	18	Yes	3	Low	Crowded; one sided W.; moderate dieback.
97	Sweetgum	14	Yes	3	Moderate	Crowded; one sided S.
98	Sweetgum	12	Yes	3	Moderate	Crowded; one sided N.
99	Sweetgum	19	Yes	4	Moderate	Multiple attachments at 20'; upright form; large surface roots.
100	Carolina cherry laurel	6	No	2	Low	Lost top; poor form.
101	Mexican fan palm	23	Yes	5	High	Good form and structure; 15' of brown trunk.
102	Victorian box	14	Yes	2	Low	Multiple attachments at 7'; very sparse crown.
103	Victorian box	10	No	3	Low	Slight lean W.; sparse crown.
104	Victorian box	17	Yes	2	Low	Multiple attachments at 8'; very sparse crown.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
105	African fern-pine	13	Yes	3	Low	One sided S.; topped for overhead utilities.
106	African fern-pine	19	Yes	3	Moderate	Codominant trunks at 8' & 12'; upright form; pruned for overhead utilities.
106	Carolina cherry laurel	9,6	No	3	Moderate	Codominant trunks at 1'; suppressed and leans S.
107	African fern-pine	30	Yes	4	Moderate	Multiple attachments at 8; upright form; dieback.
109	African fern-pine	12	Yes	3	Low	Crowded; crown bowed E.; trunk wounds; dieback.
110	African fern-pine	25	Yes	4	Moderate	Codominant trunks at 8; upright form; dieback.
111	African fern-pine	19	Yes	3	Moderate	Multiple attachments at 20; narrow form; dieback.
112	Carolina cherry laurel	7	No	2	Low	Leans NW. to horizontal; dieback.
113	Sweetgum	12	Yes	2	Low	Codominant trunks at 20'; weak attachment; one sided W.; large surface roots.
114	Sweetgum	13	Yes	3	Moderate	Codominant trunks in upper crown one sided N.; large surface roots.
115	Sweetgum	14	Yes	4	Moderate	Upright form; high crown.
116	Sweetgum	18	Yes	4	Moderate	One sided S.; large surface roots.
117	Sweetgum	8	No	3	Moderate	Crowded; upright, narrow form.
118	Sweetgum	10	No	3	Moderate	Crowded; upright, narrow form.
119	Sweetgum	11	No	3	Moderate	Crowded; upright form; one sided N.
120	Sweetgum	10	No	3	Moderate	Crowded; upright narrow form.
121	Sweetgum	11	No	3	Low	Crowded; crown bowed N. over pond.
122	Sweetgum	16	Yes	4	Moderate	Crowded; upright form; minor dieback.
123	European white birch	9	No	1	Low	Topped; declining.
124	European white birch	9	No	1	Low	Topped; declining.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
125	European white birch	6	No	3	Low	Leans N.; sparse crown.
126	European white birch	7	No	2	Low	Dead top.
127	European white birch	9	No	3	Moderate	Good form; dieback.
128	European white birch	7	No	3	Moderate	Leans S.; minor dieback.
129	European white birch	6	No	2	Low	Dead top.
130	European white birch	7	No	3	Moderate	Crook at 15'; minor dieback.
131	European white birch	6	No	2	Low	Crook at 15'; little live material remains.
132	European white birch	7	No	3	Moderate	Leans E.; minor dieback.
133	Deodar cedar	37	Yes	4	High	Good form and structure; small broken branch N.
134	Monterey pine	35	Yes	2	Low	Extensive dieback; pine pitch canker; red turpentine beetle.
135	European white birch	8	No	3	Moderate	Crowded; town bowed SE.; minor dieback.
136	Monterey pine	31	Yes	3	Moderate	Good form and structure; minor dieback.
137	Victorian box	14,14,13	Yes	3	Low	Multiple attachments at 2'; leans E.; sparse crown.
138	Victorian box	13	Yes	2	Low	Suppressed; leans E.; poor form; sparse crown.
139	Victorian box	17	Yes	3	Low	Multiple attachments at 7'; very sparse crown; stems E. stubbed at fence line.
140	Victorian box	16	Yes	2	Low	Decay column W.; very sparse crown.
141	Victorian box	16	Yes	3	Low	Multiple attachments at 6'; very sparse crown.
142	Victorian box	12	Yes	2	Low	Multiple attachments at 10'; very sparse crown.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
143	Victorian box	20	Yes	3	Low	Multiple attachments at 7'; sparse crown.
144	Victorian box	12	Yes	2	Low	Multiple attachments at 7'; sunscald W.; very sparse crown.
145	Camphor	14	Yes	2	Low	Codominant trunks at 7'; leans SW.; moderate dieback.
146	Siberian elm	27	Yes	4	High	Codominant trunks at 20'; one sided E.; dieback.
147	Monterey pine	29	Yes	3	Low	Multiple attachments at 12'; leans W.; moderate dieback; pine pitch canker.
148	Camphor	17	Yes	3	Low	Codominant trunks at 7'; leans E.; moderate dieback.
149	Camphor	14	Yes	2	Low	Codominant trunks at 7'; leans E.; extensive dieback.
150	Camphor	11	No	3	Low	Codominant trunks at 7'; leans E.; moderate dieback; basal wound/root pruned.
151	Camphor	16	Yes	3	Low	Codominant trunks at 10'; stems removed N.; leans S.; moderate dieback.
152	European white birch	6	No	2	Low	Dead top.
153	Carolina cherry laurel	8	No	2	Low	Dead top.
154	European white birch	12	Yes	3	Moderate	Trunk sweeps E.; within 2' of bldg.; dieback.
155	European white birch	7	No	3	Low	Trunk sweeps SE.; moderate dieback.
156	Carolina cherry laurel	7	No	3	Low	Dead top.
157	European white birch	14	Yes	3	Moderate	Upright form; aphids; minor dieback.
158	European white birch	8	No	3	Moderate	Trunk sweeps SE.; minor dieback.
159	European white birch	6	No	3	Low	Strong lean E.; minor dieback.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
160	Sweetgum	22	Yes	4	Moderate	Good form and structure; one sided W.; minor dieback.
161	Canary Island date palm	26	Yes	5	High	Good young tree; 3' of brown trunk.
162	Mexican fan palm	9	No	5	High	Good young tree; 3' of brown trunk.
163	Flame tree	15	Yes	3	Moderate	Upright form; dieback in upper crown.
164	Flame tree	18	Yes	3	Moderate	Codominant trunks at 7'; narrow attachment; upright form; dieback in upper crown.
165	Monterey pine	30	Yes	3	Low	Moderate dieback; pine pitch canker; red turpentine beetle.
166	Carolina cherry laurel	16	Yes	3	Moderate	Upright form; possibly topped; close to bldg.
167	Monterey pine	32	Yes	2	Low	High crown; moderate dieback; pine pitch canker.
168	Mexican fan palm	23	Yes	5	High	Good form and structure; 25' of brown trunk.
169	Dracaena palm	5,5,4,4	No	3	Moderate	Multiple attachments at base; fair structure.
170	Carolina cherry laurel	8	No	3	Low	Leans W. to horizontal; twig dieback.
171	Carolina cherry laurel	10	No	3	Moderate	Leans W.; twig dieback.
172	Mexican fan palm	21	Yes	5	High	Good form and structure; 30' of brown trunk.
173	Mexican fan palm	21	Yes	5	High	Good form and structure; 30' of brown trunk.
174	Flame tree	16	Yes	4	Moderate	Codominant trunks at 15'; slight lean S.; dieback.
175	Black locust	35	Yes	4	Moderate	Multiple attachments at 10'; one sided S.; fair structure; dieback.
176	Coast live oak	22	Yes	4	Moderate	Crowded; leans E.; heavy laterals.
177	European white birch	10	No	1	Low	All but dead.
178	Dracaena palm	12,1	Yes	2	Low	Codominant trunks at base; girdling chain at 3'.
179	Italian alder	10	No	3	Moderate	Crowded; leans W.; minor dieback.

Tree Assessment

Laguna Clara
Santa Clara, CA
June 2018



Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
180	Italian alder	17	Yes	4	Moderate	Slight lean W.; minor dieback.
181	Italian alder	15	Yes	3	Moderate	Codominant trunks at 6'; trunk sweeps S.; minor dieback.
182	Italian alder	16	Yes	3	Low	Crook at 12'; crown bowed S.; minor dieback.
183	Italian alder	13	Yes	3	Moderate	Crowded; leaning & one sided E.; minor dieback.
184	Italian alder	14	Yes	3	Low	Codominant trunks at 3'; upright form; moderate dieback.
185	Coast live oak	22	Yes	3	Low	Codominant trunks at 7'; crown bowed S. over bldg.; roof cut around trunk.
186	European white birch	8	No	3	Moderate	Codominant trunks at 10'; slight lean SW.; dieback.
188	European white birch	9	No	3	Moderate	Good form; dieback in upper crown.
189	European white birch	7	No	3	Low	Dead top; asymmetric form.
190	European white birch	7	No	3	Low	Slight lean SW.; dead top; asymmetric form.
191	European white birch	5,5,3	No	3	Low	Multiple attachments at base; slight lean W.; dieback.
192	African fern-pine	24	Yes	4	Moderate	Codominant trunks at 5'; crook at 8'; close t bldg.
193	European white birch	6	No	2	Low	Leans S.; moderate dieback.
194	European white birch	9	No	1	Low	Dead top.
195	European white birch	5	No	2	Low	Leans S.; moderate dieback.
197	Avocado	14	Yes	4	Moderate	Codominant trunks at 20'; high crown.
198	Monterey pine	23	Yes	2	Low	One sided E.; moderate dieback; pine pitch canker.
199	European white birch	6	No	3	Low	Leans E.; nasal cavity; dieback.

Tree Assessment

Laguna Clara
Santa Clara, CA
June 2018



Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
200	Camphor	21	Yes	3	Moderate	Multiple attachments at 20'; good form; lost branch in middle of crown.
201	Camphor	6,4	No	3	Low	Suppressed; bowed E. over pond.
202	Coast live oak	22	Yes	4	Moderate	Multiple attachments at 18'; good form; roof cut around trunk.
203	European white birch	6	No	2	Low	Suppressed; strong lean E.; dead top.
205	Siberian elm	22	Yes	3	Low	Multiple attachments at 10'; S. stem stubbed at 15'; moderate dieback.
206	Siberian elm	34	Yes	3	Moderate	Codominant trunks at 4'; basal cavity N.; moderate dieback.
207	Chinese elm	5,4	No	2	Low	Codominant trunks at base; leans N.; no roots S.
208	Hollywood juniper	8	No	3	Moderate	Multiple attachments at base; one stem leans W.
209	Carolina cherry laurel	13	Yes	3	Moderate	Multiple attachments at 10'; large trunk wound E.; dieback.
210	Carolina cherry laurel	6	No	3	Moderate	Suppressed; crook at 5'; leans E.; dieback.
211	Monterey pine	22	Yes	3	Low	Leans S.; moderate dieback; pine pitch canker.
212	European white birch	8	No	3	Low	Upper crown bowed N.; dieback.
213	European white birch	8	No	3	Low	Crook in upper crown; dieback.
214	Monterey pine	25	Yes	3	Low	Good form; moderate dieback; pine pitch canker.
215	Canary Island date palm	30	Yes	5	High	Good young tree; 5' of brown trunk.
216	European white birch	9,9	Yes	3	Low	Codominant trunks at base; dead top.
217	European white birch	9	No	3	Moderate	Upper crown leans NW.; dieback.

Tree Assessment

Laguna Clara
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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
218	European white birch	6	No	3	Low	Leans W.; moderate dieback.
220	European white birch	8	No	3	Moderate	Good form; minor dieback.
221	Carolina cherry laurel	8	No	2	Low	Leans W.; moderate dieback.
222	European white birch	10	No	3	Moderate	Good form; minor dieback.
223	European white birch	6	No	3	Moderate	Codominant trunks at 6'; one stem removed.
224	European white birch	7	No	3	Low	Dead top
225	European white birch	6	No	3	Low	Upper crown sweeps W.; dead top.
226	European white birch	8	No	3	Moderate	Slight lean W.; dieback .
227	European white birch	9	No	3	Moderate	Codominant trunks at 15'; leans SW.; dieback.
228	Carolina cherry laurel	16	Yes	4	Moderate	Multiple attachments at 20'; high crown; good form; 18" from bldg.

Tree Disposition

Laguna Clara
Santa Clara, CA
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Tag #	Species	Diameter	Protected	Disposition	Comments
1	Monterey pine	22	Yes	Preserve	Outside Project Area
2	Monterey pine	21	Yes	Preserve	Outside Project Area
3	Monterey pine	33	Yes	Remove	Adjacent to pipeline
4	Monterey pine	19	Yes	Remove	Adjacent to pipeline
5	Trident maple	14	Yes	Remove	Adjacent to building
6	Trident maple	10	No	Remove	Within planting bed
7	Monterey pine	29	Yes	Remove	Within planting bed
8	African fern-pine	14	Yes	Remove	Within planting bed
9	African fern-pine	12	Yes	Remove	Within planting bed
10	African fern-pine	14	Yes	Remove	Within planting bed
11	African fern-pine	13	Yes	Remove	Within planting bed
12	African fern-pine	19	Yes	Remove	Within planting bed
13	Trident maple	9	No	Remove	Within planting bed
14	Trident maple	8	No	Remove	Within planting bed
15	African fern-pine	31	Yes	Remove	Adjacent to bioretention
16	African fern-pine	16	Yes	Remove	Within bioretention
17	African fern-pine	11	No	Remove	Adjacent to bioretention
18	African fern-pine	17	Yes	Remove	Adjacent to bioretention
19	African fern-pine	13	Yes	Remove	Adjacent to bioretention
20	African fern-pine	18	Yes	Remove	Within bioretention
21	African fern-pine	19	Yes	Remove	Within bioretention
23	African fern-pine	25	Yes	Remove	Within planting bed
24	African fern-pine	21	Yes	Remove	Adjacent to building
25	African fern-pine	20	Yes	Remove	Adjacent to planting bed
26	Monterey pine	31	Yes	Remove	
27	African fern-pine	24	Yes	Remove	
28	African fern-pine	23	Yes	Remove	
29	Japanese maple	13	Yes	Preserve	Outside Project Area
30	Japanese maple	9	No	Preserve	Outside Project Area
31	Japanese maple	9	No	Preserve	Outside Project Area
32	Victorian box	13,13,9	Yes	Preserve	Outside Project Area
33	Carolina cherry laurel	8	No	Remove	
34	Coast redwood	22	Yes	Remove	
35	Coast redwood	23	Yes	Remove	
36	Coast redwood	29	Yes	Remove	
37	Carolina cherry laurel	4,3	No	Remove	
38	Carolina cherry laurel	8	No	Remove	
39	Carolina cherry laurel	11	No	Remove	
40	Hollywood juniper	11,10	Yes	Remove	
41	European white birch	7	No	Remove	

Tree Disposition

Laguna Clara
Santa Clara, CA
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Tag #	Species	Diameter	Protected	Disposition	Comments
42	European white birch	8	No	Remove	
43	Coast redwood	34	Yes	Remove	
48	Flowering dogwood	7	No	Remove	
49	Mexican fan palm	19	Yes	Remove	
50	Coast redwood	30	Yes	Remove	
51	Coast redwood	28	Yes	Remove	
52	Coast redwood	28	Yes	Remove	
53	Purpleleaf plum	18	Yes	Remove	
55	European white birch	8,7	No	Remove	
56	European white birch	6	No	Remove	
57	European white birch	6	No	Remove	
59	African fern-pine	21	Yes	Remove	
60	African fern-pine	22	Yes	Remove	
61	African fern-pine	26	Yes	Remove	
62	African fern-pine	13	Yes	Remove	
63	African fern-pine	20	Yes	Remove	
64	African fern-pine	19	Yes	Remove	
65	African fern-pine	19	Yes	Remove	
66	African fern-pine	16	Yes	Remove	
67	African fern-pine	21	Yes	Remove	
68	African fern-pine	22	Yes	Remove	
69	African fern-pine	20	Yes	Remove	
70	African fern-pine	12	Yes	Remove	
71	African fern-pine	20	Yes	Remove	
72	African fern-pine	21	Yes	Remove	
73	African fern-pine	21	Yes	Remove	
74	African fern-pine	16	Yes	Remove	
75	African fern-pine	25	Yes	Remove	
76	African fern-pine	16	Yes	Remove	
77	African fern-pine	16	Yes	Remove	
78	African fern-pine	21	Yes	Remove	
79	African fern-pine	18	Yes	Remove	
80	African fern-pine	18	Yes	Remove	
81	African fern-pine	17	Yes	Remove	
82	African fern-pine	15	Yes	Remove	
83	African fern-pine	27	Yes	Remove	
84	African fern-pine	17	Yes	Remove	
85	African fern-pine	13	Yes	Remove	
86	African fern-pine	11	No	Remove	
87	African fern-pine	9	No	Remove	

Tree Disposition

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Santa Clara, CA
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Tag #	Species	Diameter	Protected	Disposition	Comments
88	African fern-pine	9	No	Remove	
89	African fern-pine	14	Yes	Remove	
90	African fern-pine	13	Yes	Remove	
91	African fern-pine	15	Yes	Remove	
92	African fern-pine	15	Yes	Remove	
93	African fern-pine	10	No	Remove	
94	African fern-pine	13	Yes	Remove	
95	African fern-pine	18	Yes	Remove	
96	African fern-pine	18	Yes	Remove	
97	Sweetgum	14	Yes	Remove	
98	Sweetgum	12	Yes	Remove	
99	Sweetgum	19	Yes	Remove	
100	Carolina cherry laurel	6	No	Remove	
101	Mexican fan palm	23	Yes	Preserve	
102	Victorian box	14	Yes	Remove	Poor condition
103	Victorian box	10	No	Remove	Low suitability
104	Victorian box	17	Yes	Remove	Poor condition
105	African fern-pine	13	Yes	Remove	
106	African fern-pine	19	Yes	Remove	
106	Carolina cherry laurel	9,6	No	Remove	
107	African fern-pine	30	Yes	Remove	
109	African fern-pine	12	Yes	Remove	
110	African fern-pine	25	Yes	Remove	
111	African fern-pine	19	Yes	Remove	
112	Carolina cherry laurel	7	No	Remove	
113	Sweetgum	12	Yes	Remove	
114	Sweetgum	13	Yes	Remove	
115	Sweetgum	14	Yes	Remove	
116	Sweetgum	18	Yes	Remove	
117	Sweetgum	8	No	Remove	
118	Sweetgum	10	No	Remove	
119	Sweetgum	11	No	Remove	
120	Sweetgum	10	No	Remove	
121	Sweetgum	11	No	Remove	
122	Sweetgum	16	Yes	Remove	
123	European white birch	9	No	Remove	
124	European white birch	9	No	Remove	
125	European white birch	6	No	Remove	
126	European white birch	7	No	Remove	
127	European white birch	9	No	Remove	

Tree Disposition

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Tag #	Species	Diameter	Protected	Disposition	Comments
128	European white birch	7	No	Remove	
129	European white birch	6	No	Remove	
130	European white birch	7	No	Remove	
131	European white birch	6	No	Remove	
132	European white birch	7	No	Remove	
133	Deodar cedar	37	Yes	Remove	
134	Monterey pine	35	Yes	Remove	
135	European white birch	8	No	Remove	
136	Monterey pine	31	Yes	Remove	
137	Victorian box	14,14,13	Yes	Remove	Outside Project Area
138	Victorian box	13	Yes	Remove	
139	Victorian box	17	Yes	Remove	Low suitability
140	Victorian box	16	Yes	Remove	Poor condition
141	Victorian box	16	Yes	Remove	Low suitability
142	Victorian box	12	Yes	Remove	Outside Project Area
143	Victorian box	20	Yes	Preserve	Outside Project Area
144	Victorian box	12	Yes	Preserve	Outside Project Area
145	Camphor	14	Yes	Preserve	Outside Project Area
146	Siberian elm	27	Yes	Preserve	Outside Project Area
147	Monterey pine	29	Yes	Preserve	Outside Project Area
148	Camphor	17	Yes	Preserve	Outside Project Area
149	Camphor	14	Yes	Preserve	Outside Project Area
150	Camphor	11	No	Preserve	Outside Project Area
151	Camphor	16	Yes	Preserve	Outside Project Area
152	European white birch	6	No	Remove	
153	Carolina cherry laurel	8	No	Remove	
154	European white birch	12	Yes	Remove	
155	European white birch	7	No	Remove	
156	Carolina cherry laurel	7	No	Remove	
157	European white birch	14	Yes	Remove	
158	European white birch	8	No	Remove	
159	European white birch	6	No	Remove	
160	Sweetgum	22	Yes	Remove	
161	Canary Island date palm	26	Yes	Remove	
162	Mexican fan palm	9	No	Remove	
163	Flame tree	15	Yes	Preserve	Outside Project Area
164	Flame tree	18	Yes	Preserve	Outside Project Area
165	Monterey pine	30	Yes	Preserve	Outside Project Area
166	Carolina cherry laurel	16	Yes	Preserve	Outside Project Area
167	Monterey pine	32	Yes	Preserve	Outside Project Area

Tree Disposition

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Tag #	Species	Diameter	Protected	Disposition	Comments
168	Mexican fan palm	23	Yes	Preserve	Outside Project Area
169	Dracaena palm	5,5,4,4	No	Preserve	Outside Project Area
170	Carolina cherry laurel	8	No	Preserve	Outside Project Area
171	Carolina cherry laurel	10	No	Preserve	Outside Project Area
172	Mexican fan palm	21	Yes	Preserve	Outside Project Area
173	Mexican fan palm	21	Yes	Preserve	Outside Project Area
174	Flame tree	16	Yes	Preserve	Outside Project Area
175	Black locust	35	Yes	Preserve	Outside Project Area
176	Coast live oak	22	Yes	Preserve	Outside Project Area
177	European white birch	10	No	Preserve	Outside Project Area
178	Dracaena palm	12,1	Yes	Preserve	Outside Project Area
179	Italian alder	10	No	Preserve	Outside Project Area
180	Italian alder	17	Yes	Preserve	Outside Project Area
181	Italian alder	15	Yes	Preserve	Outside Project Area
182	Italian alder	16	Yes	Preserve	Outside Project Area
183	Italian alder	13	Yes	Preserve	Outside Project Area
184	Italian alder	14	Yes	Preserve	Outside Project Area
185	Coast live oak	22	Yes	Preserve	Outside Project Area
186	European white birch	8	No	Preserve	Outside Project Area
188	European white birch	9	No	Preserve	Outside Project Area
189	European white birch	7	No	Preserve	Outside Project Area
190	European white birch	7	No	Preserve	Outside Project Area
191	European white birch	5,5,3	No	Preserve	Outside Project Area
192	African fern-pine	24	Yes	Remove	
193	European white birch	6	No	Remove	
194	European white birch	9	No	Remove	
195	European white birch	5	No	Remove	
197	Avocado	14	Yes	Preserve	Outside Project Area
198	Monterey pine	23	Yes	Remove	
199	European white birch	6	No	Remove	
200	Camphor	21	Yes	Remove	
201	Camphor	6,4	No	Remove	
202	Coast live oak	22	Yes	Remove	
203	European white birch	6	No	Remove	
205	Siberian elm	22	Yes	Remove	
206	Siberian elm	34	Yes	Remove	
207	Chinese elm	5,4	No	Remove	
208	Hollywood juniper	8	No	Remove	
209	Carolina cherry laurel	13	Yes	Remove	
210	Carolina cherry laurel	6	No	Remove	

Tree Disposition

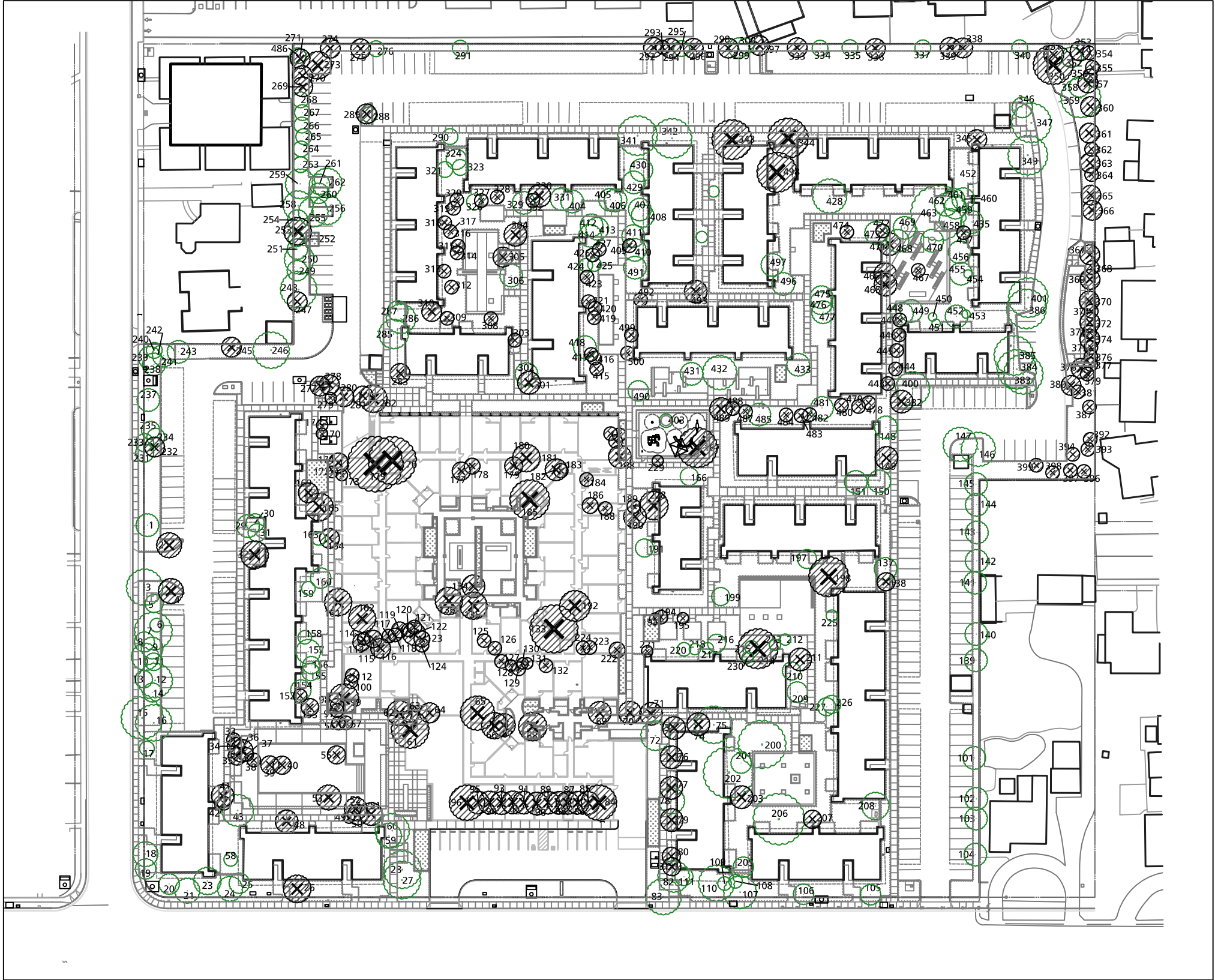
Laguna Clara
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Tag #	Species	Diameter	Protected	Disposition	Comments
211	Monterey pine	22	Yes	Remove	
212	European white birch	8	No	Remove	
213	European white birch	8	No	Remove	
214	Monterey pine	25	Yes	Remove	
215	Canary Island date palm	30	Yes	Remove	
216	European white birch	9,9	Yes	Remove	
217	European white birch	9	No	Remove	
218	European white birch	6	No	Remove	
220	European white birch	8	No	Remove	
221	Carolina cherry laurel	8	No	Remove	
222	European white birch	10	No	Remove	
223	European white birch	6	No	Remove	
224	European white birch	7	No	Remove	
225	European white birch	6	No	Remove	
226	European white birch	8	No	Remove	
227	European white birch	9	No	Remove	
228	Carolina cherry laurel	16	Yes	Preserve	Outside Project Area

Appendix C

Tree Planting Plan



TREE MITIGATION CHART

	Total Existing Trees on Site	457
xx	Existing Trees to be Removed	255
xx	Existing Trees to Remain	202
	Replacement Trees Needed 2:1 ratio (24" box)	510
	Total Proposed Trees (24" box)	327

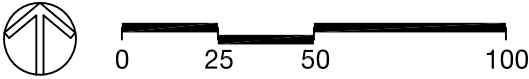
TREE CALLOUT KEY

Tree Number
(see arborist's report for
more information) xx

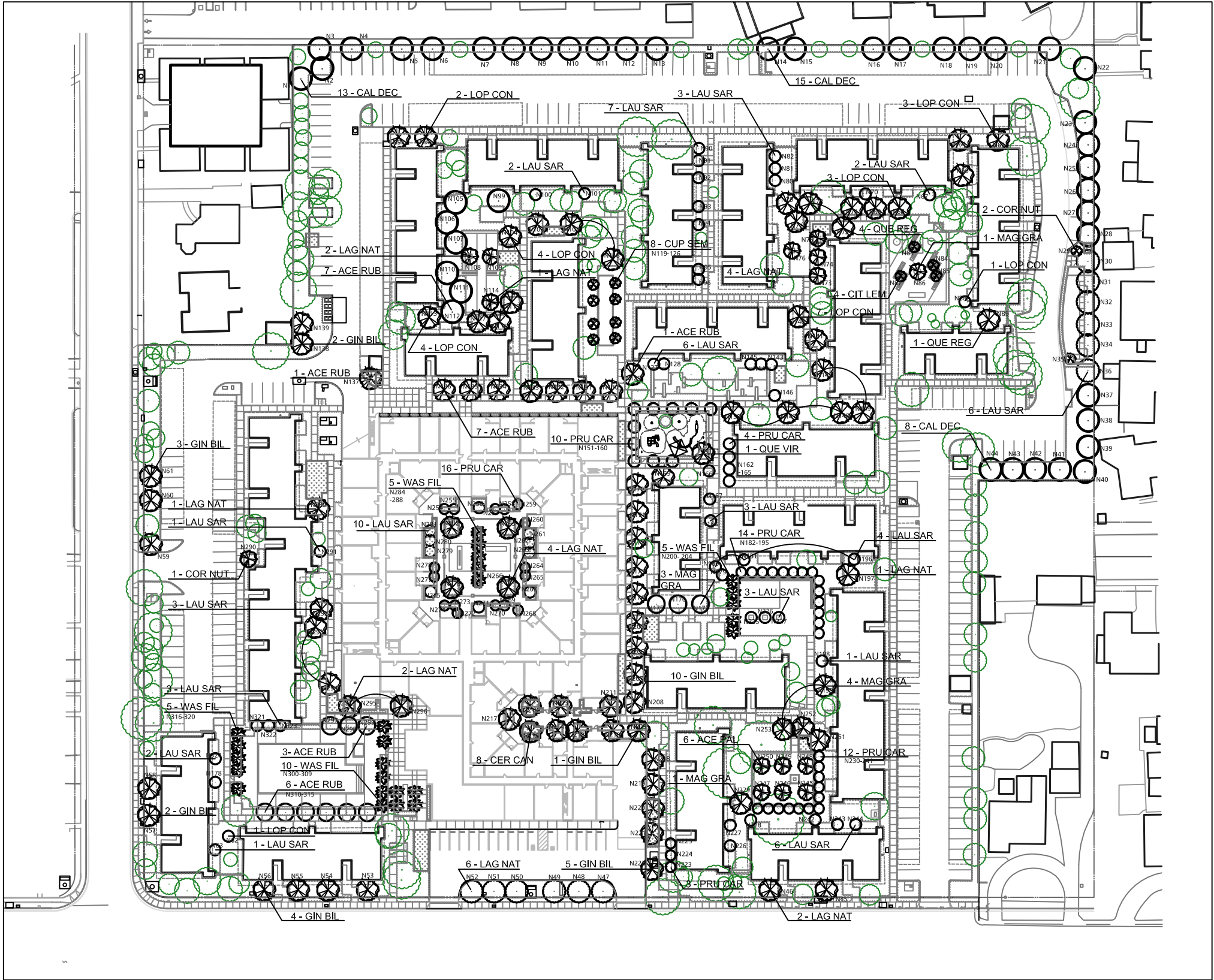
NOTES

The numbers above are based on the Arborist Report prepared by Hort Science, dated June 14, 2019. See that report for more information on tree numbers, size, health and tree protection strategies.

This sheet shows existing trees to remain and existing trees to be removed only. For proposed trees see sheets L-2.1 thru L-2.6

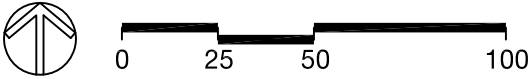


TREE DISPOSITION PLAN
Scale: 1" = 100'-0"





PROPOSED TREE PLANTING

TREES * 24" box standard unless notes otherwise.			
KEY	BOTANICAL NAME	COMMON NAME	# trees
ACE PAL	Acer palmatum	Japanese Maple	6
ACE RUB	Acer rubrum 'Red Sunset'	Red Maple 'Red Sunset'	25
CAL DEC	Calocedrus decurrens	Incense-Cedar	36
CER CAN	Cercis c. 'Forest Pansy'	Forest Pansy Redbud	8
CIT LEM	Citrus x meyeri	Meyer lemon	4
COR NUT	Cornus nuttallii 'Venus'	Western Dogwood	3
CUP SEM	Cupressus s. 'Stricta'	Columnar Italian Cypress	8
GIN BIL	Ginkgo biloba 'Fairmount'	Maidenhair Tree	27
LAG NAT	Lagerstroemia 'Natchez'	Crepe Myrtle	23
LAU SAR	Laurus 'Saratoga'	Sweet Bay	62
LOP CON	Lophostemon confertus	Brisbane Box	24
MAG GRA	Magnolia g. 'Kay Parris'	Kay Parris Magnolia	10
PRU CAR	Prunus c. 'Bright and Tight'	Carolina Cherry Laurel	60
QUE REG	Quercus 'Regal Prince'	Regal Prince Oak	5
QUE VIR	Quercus virginiana	Live Oak	1
WAS FIL	Washingtonia filifera	California Fan Palm	25





TREE PLANTING PLAN
Scale: 1" = 100'-0"

Tree Replacement List			Laguna Clara Santa Clara, CA November 11, 2019						Tree Replacement List			Laguna Clara Santa Clara, CA November 11, 2019					
Tag #	Species	Diameter	Protected	Disposition	Reason Removed	Replacement New Tree Numbers	Replacement Tree Species	Tag #	Species	Diameter	Protected	Disposition	Reason Removed	Replacement New Tree Numbers	Replacement Tree Species		
2	Monterey pine	21	Yes	Remove	Poor condition	N37, N38	CAL DEC	117	Sweetgum	8	No	Remove	Within building				
4	Monterey pine	19	Yes	Remove	Poor condition	N39, N40	CAL DEC	118	Sweetgum	10	No	Remove	Within building				
26	Monterey pine	31	Yes	Remove	Poor condition	N41, N42	CAL DEC	119	Sweetgum	11	No	Remove	Within building				
32	Victorian box	13,13,9	Yes	Remove	Poor condition	N192, N193	PRU CAR	120	Sweetgum	10	No	Remove	Within building				
33	Carolina cherry laurel	8	No	Remove	Within pool area			121	Sweetgum	11	No	Remove	Within building				
34	Coast redwood	22	Yes	Remove	Within pool area	N1, N2	CAL DEC	122	Sweetgum	16	Yes	Remove	Within building				
35	Coast redwood	23	Yes	Remove	Within pool area	N3, N4	CAL DEC	123	European white birch	9	No	Remove	Within building				
36	Coast redwood	29	Yes	Remove	Within pool area	N30, N31	LAU SAR	124	European white birch	9	No	Remove	Within building				
37	Carolina cherry laurel	4,3	No	Remove	Within pool area			125	European white birch	6	No	Remove	Within building				
38	Carolina cherry laurel	8	No	Remove	Within pool area			126	European white birch	7	No	Remove	Within building				
39	Carolina cherry laurel	11	No	Remove	Within pool area			127	European white birch	9	No	Remove	Within building				
40	Hollywood juniper	11,10	Yes	Remove	Within pool area	N194, N195	PRU CAR	128	European white birch	7	No	Remove	Within building				
41	European white birch	7	No	Remove	Within pool area			129	European white birch	6	No	Remove	Within building				
42	European white birch	8	No	Remove	Within pool area			130	European white birch	7	No	Remove	Within building				
43	Coast redwood	34	Yes	Remove	Within pool area	N32, N33	LAU SAR	131	European white birch	6	No	Remove	Within building				
48	Flowering dogwood	7	No	Remove	Within pool area			132	European white birch	7	No	Remove	Within building				
49	Mexican fan palm	19	Yes	Remove	Within pool area	N286, N287	WAS FIL	133	Deodar cedar	37	Yes	Remove	Within building	N10, N9	CAL DEC		
50	Coast redwood	30	Yes	Remove	Within pool area	N34, N36	LAU SAR	134	Monterey pine	35	Yes	Remove	Within building	N43, N44	CAL DEC		
51	Coast redwood	28	Yes	Remove	Within pool area	N325, N326	LAU SAR	135	European white birch	8	No	Remove	Within building				
52	Coast redwood	28	Yes	Remove	Within pool area	N327, N256	LAU SAR	136	Monterey pine	31	Yes	Remove	Within building	N14, N15	CAL DEC		
53	Purpleleaf plum	18	Yes	Remove	Within pool area	N77, N288	QUE REG, WAS FIL	138	Victorian box	13	Yes	Remove	Poor condition	N270, N272	PRU CAR		
55	European white birch	8,7	No	Remove	Within pool area			140	Victorian box	16	Yes	Remove	Poor condition				
56	European white birch	6	No	Remove	Adjacent to building			142	Victorian box	12	Yes	Remove	Poor condition	N273, N274	PRU CAR		
57	European white birch	6	No	Remove	Adjacent to building			144	Victorian box	12	Yes	Remove	Poor condition	N277, N278	PRU CAR		
59	African fern-pine	21	Yes	Remove	Adjacent to bicycle parking	N210, N211	CER CAN	145	Camphor	14	Yes	Remove	Poor condition	N266, N276	LAG NAT		
60	African fern-pine	22	Yes	Remove	Adjacent to bicycle parking	N212, N213	CER CAN	148	Camphor	17	Yes	Remove	Replacing sidewalk - low suitability				
61	African fern-pine	26	Yes	Remove	Within building	N214, N215	CER CAN	149	Camphor	14	Yes	Remove	Poor condition	N282, N283	LAG NAT		
62	African fern-pine	13	Yes	Remove	Within building	N151, N152	PRU CAR	150	Camphor	11	No	Remove	Replacing sidewalk - low suitability				
63	African fern-pine	20	Yes	Remove	Within building	N216, N217	CER CAN	151	Camphor	16	Yes	Remove	Replacing sidewalk - low suitability				
64	African fern-pine	19	Yes	Remove	Within building	N290	COR NUT	152	European white birch	6	No	Remove	Filling in pond				
65	African fern-pine	19	Yes	Remove	Within building			153	Carolina cherry laurel	8	No	Remove	Filling in pond				
66	African fern-pine	16	Yes	Remove	Within building			154	European white birch	12	Yes	Remove	Filling in pond	N108, N109	LAG NAT		
67	African fern-pine	21	Yes	Remove	Within building	N230, N231	PRU CAR	155	European white birch	7	No	Remove	Filling in pond				
68	African fern-pine	22	Yes	Remove	Within building	N232, N233	PRU CAR	156	Carolina cherry laurel	7	No	Remove	Filling in pond				
69	African fern-pine	20	Yes	Remove	Within hardscape	N234, N235	PRU CAR	157	European white birch	14	Yes	Remove	Filling in pond	N114, N275	LAG NAT, LAU SAR		
70	African fern-pine	12	Yes	Remove	Within building	N153, N154	PRU CAR	158	European white birch	8	No	Remove	Filling in pond				
71	African fern-pine	20	Yes	Remove	Within building	N239, N240	PRU CAR	159	European white birch	6	No	Remove	Filling in pond				
73	African fern-pine	21	Yes	Remove	Poor condition	N241, N242	PRU CAR, LAU SAR	160	Sweetgum	22	Yes	Remove	Filling in pond	N97, N98	LOP CON		
74	African fern-pine	16	Yes	Remove	Poor condition			161	Canary Island date palm	26	Yes	Remove	Adjacent to building	N200, N201	WAS FIL		
75	African fern-pine	25	Yes	Remove	Replacing sidewalk	N243, N244	LAU SAR	162	Mexican fan palm	9	No	Remove	Within building				
76	African fern-pine	16	Yes	Remove	Poor condition			163	Flame tree	15	Yes	Remove	Filling in pond				
77	African fern-pine	16	Yes	Remove	Poor condition			164	Flame tree	18	Yes	Remove	Filling in pond				
79	African fern-pine	18	Yes	Remove	Poor condition			165	Monterey pine	30	Yes	Remove	Filling in pond	N16, N17	CAL DEC		
80	African fern-pine	18	Yes	Remove	Low suitability for preservation			166	Carolina cherry laurel	16	Yes	Remove	Adjacent to sidewalk				
81	African fern-pine	17	Yes	Remove	Low suitability for preservation			167	Monterey pine	32	Yes	Remove	Filling in pond	N18, N19	CAL DEC		
84	African fern-pine	17	Yes	Remove	Adjacent to building			168	Mexican fan palm	23	Yes	Remove	Filling in pond	N319, N320	WAS FIL		
85	African fern-pine	13	Yes	Remove	Adjacent to building	N155, N156	PRU CAR	169	Dracaena palm	5,5,4,4	No	Remove	Filling in pond				
86	African fern-pine	11	No	Remove	Adjacent to building			170	Carolina cherry laurel	8	No	Remove	Low value				
87	African fern-pine	9	No	Remove	Adjacent to building			171	Carolina cherry laurel	10	No	Remove	Low value				
88	African fern-pine	9	No	Remove	Adjacent to building			172	Mexican fan palm	21	Yes	Remove	Filling in pond	N317, N318	WAS FIL		
89	African fern-pine	14	Yes	Remove	Adjacent to building	N157, N158	PRU CAR	173	Mexican fan palm	21	Yes	Remove	Adjacent to building	N300, N316	WAS FIL		
90	African fern-pine	13	Yes	Remove	Adjacent to building	N159, N160	PRU CAR	174	Flame tree	16	Yes	Remove	Adjacent to building				
91	African fern-pine	15	Yes	Remove	Adjacent to building			175	Black locust	35	Yes	Remove	Within building	N184, N185	PRU CAR		
92	African fern-pine	15	Yes	Remove	Adjacent to building			176	Coast live oak	22	Yes	Remove	Within building	N161, N79	QUE VIR, QUE REG		
93	African fern-pine	10	No	Remove	Adjacent to building			177	European white birch	10	No	Remove	Within building				
94	African fern-pine	13	Yes	Remove	Adjacent to building	N162, N163	PRU CAR	178	Dracaena palm	12,1	Yes	Remove	Within building	N202, N203	WAS FIL		
95	African fern-pine	18	Yes	Remove	Adjacent to building			179	Italian alder	10	No	Remove	Within building				
96	African fern-pine	18	Yes	Remove	Adjacent to building			180	Italian alder	17	Yes	Remove	Within building				
97	Sweetgum	14	Yes	Remove	Adjacent to building	N164, N165	PRU CAR	181	Italian alder	15	Yes	Remove	Within building				
98	Sweetgum	12	Yes	Remove	Adjacent to building	N254, N255	PRU CAR	182	Italian alder	16	Yes	Remove	Within building				
99	Sweetgum	19	Yes	Remove	Within building			183	Italian alder	13	Yes	Remove	Within building	N119, N120	CUP SEM		
100	Carolina cherry laurel	6	No	Remove	Within building			184	Italian alder	14	Yes	Remove	Within building	N121, N122	CUP SEM		
102	Victorian box	14	Yes	Remove	Poor condition	N257, N258	PRU CAR	185	Coast live oak	22	Yes	Remove	Within building	N78, N72	QUE REG		
103	Victorian box	10	No	Remove	Poor condition			186	European white birch	8	No	Remove	Within building				
104	Victorian box	17	Yes	Remove	Poor condition			188	European white birch	9	No	Remove	Within building				
112	Carolina cherry laurel	7	No	Remove	Within building			189	European white birch	7	No	Remove	Filling in pond				
113	Sweetgum	12	Yes	Remove	Within building	N259, N260	PRU CAR	190	European white birch	7	No	Remove	Filling in pond				
114	Sweetgum	13	Yes	Remove	Within building	N264, N265	PRU CAR	191	European white birch	5,5,3	No	Remove	Filling in pond				
115	Sweetgum	14	Yes	Remove	Within building	N268, N269	PRU CAR	192	African								

Tree Replacement List								Tree Replacement List							
				Laguna Clara Santa Clara, CA November 11, 2019								Laguna Clara Santa Clara, CA November 11, 2019			
Tag #	Species	Diameter	Protected	Disposition	Reason Removed	Replacement New Tree Numbers	Replacement Tree Species	Tag #	Species	Diameter	Protected	Disposition	Reason Removed	Replacement New Tree Numbers	Replacement Tree Species
194	European white birch	9	No	Remove	Poor condition			300	Coast redwood	26	Yes	Remove	Irrigation needs	N227, N226	LAU SAR
195	European white birch	5	No	Remove	Poor condition			301	Japanese maple	11	No	Remove	Poor condition		
197	Avocado	14	Yes	Remove	Filling in pond	N125, N126	CUP SEM	302	Japanese maple	8.4	No	Remove	Low suitability		
198	Monterey pine	23	Yes	Remove	Filling in pond, poor condition	N20, N21	CAL DEC	303	Japanese maple	10	No	Remove	Poor condition		
199	European white birch	6	No	Remove	Filling in pond			304	European white birch	10	No	Remove	Filling pond		
200	Camphor	21	Yes	Remove	Filling in pond	N7, N8	CAL DEC	305	Sweetgum	16	Yes	Remove	Filling pond		
201	Camphor	6.4	No	Remove	Filling in pond			306	Sweetgum	19	Yes	Remove	Filling pond		
202	Coast live oak	22	Yes	Remove	Filling in pond	N88, N71	LOP CON	308	Sweetgum	18	Yes	Remove	Filling pond		
203	European white birch	6	No	Remove	Filling in pond			309	Sweetgum	15	Yes	Remove	Filling pond		
206	Siberian elm	34	Yes	Remove	Filling in pond	N188, N189	PRU CAR	310	Coast redwood	36	Yes	Remove	Poor condition	N291, N324	LAU SAR
207	Chinese elm	5.4	No	Remove	Filling in pond			312	Sweetgum	14	Yes	Remove	Filling pond	N75, N76	LAG NAT
208	Hollywood juniper	8	No	Remove	Filling in pond			313	Sweetgum	18	Yes	Remove	Filling pond		
209	Carolina cherry laurel	13	Yes	Remove	Filling in pond	N73, N74	LAG NAT	314	Sweetgum	13	Yes	Remove	Filling pond	N83, N84	CIT LEM
210	Carolina cherry laurel	6	No	Remove	Filling in pond			315	Sweetgum	9	No	Remove	Filling pond		
211	Monterey pine	22	Yes	Remove	Filling in pond	N22, N23	CAL DEC	316	Sweetgum	13	Yes	Remove	Filling pond	N85, N87	CIT LEM
212	European white birch	8	No	Remove	Filling in pond			317	Sweetgum	12	Yes	Remove	Filling pond	N29, N35	COR NUT
213	European white birch	8	No	Remove	Filling in pond			318	Sweetgum	13	Yes	Remove	Filling pond	N45, N46	LAG NAT
214	Monterey pine	25	Yes	Remove	Filling in pond	N24, N25	CAL DEC	319	Sweetgum	15	Yes	Remove	Filling pond		
215	Canary Island date palm	30	Yes	Remove	Filling in pond	N301, N302	WAS FIL	320	Sweetgum	15	Yes	Remove	Filling pond		
216	European white birch	9.9	Yes	Remove	Filling in pond	N190, N191	PRU CAR	326	Sweetgum	15	Yes	Remove	Filling pond		
217	European white birch	9	No	Remove	Filling in pond			327	Sweetgum	12	Yes	Remove	Filling pond		
218	European white birch	6	No	Remove	Filling in pond			328	Sweetgum	13	Yes	Remove	Filling pond		
220	European white birch	8	No	Remove	Filling in pond			329	Sweetgum	17	Yes	Remove	Filling pond		
221	Carolina cherry laurel	8	No	Remove	Within building			330	Sweetgum	18	Yes	Remove	Filling pond		
222	European white birch	10	No	Remove	Within building			331	Sweetgum	15	Yes	Remove	Filling pond		
223	European white birch	6	No	Remove	Within building			332	Sweetgum	12	Yes	Remove	Filling pond		
224	European white birch	7	No	Remove	Within building			333	Victorian box	17	Yes	Remove	Poor condition		
225	European white birch	6	No	Remove	Filling in pond			336	Victorian box	20	Yes	Remove	Poor condition		
226	European white birch	8	No	Remove	Filling in pond			338	Victorian box	17	Yes	Remove	Poor condition		
227	European white birch	9	No	Remove	Filling in pond			339	Victorian box	10	No	Remove	Poor condition		
228	Carolina cherry laurel	16	Yes	Remove	Filling in pond			343	Coast redwood	39	Yes	Remove	Poor condition	N178, N63	LAU SAR
247	Coast redwood	24	Yes	Remove	11 feet from parking lot	N279, N280	LAU SAR	344	Coast redwood	25	Yes	Remove	Poor condition	N62, N104	LOP CON
248	Coast redwood	45	Yes	Remove	7 feet from parking lot	N281, N261	LAU SAR	345	Pin oak	11	No	Remove	Poor condition		
249	Coast redwood	27	Yes	Remove	8 feet from parking lot	N262, N263	LAU SAR	348	Coast redwood	29	Yes	Potentially preserve	Replacing sidewalk	N103, N102	LOP CON
250	Coast redwood	34	Yes	Remove	7 feet from parking lot	N267, N271	LAU SAR	350	Coast redwood	38	Yes	Remove	Adjacent to parking lot	N118, N115	LOP CON
251	Coast redwood	31	Yes	Remove	8 feet from parking lot	N321, N322	LAU SAR	351	Coast redwood	31	Yes	Remove	Adjacent to parking lot	N116, N117	LOP CON
252	Coast redwood	16	Yes	Remove	9 feet from parking lot			352	Coast redwood	29	Yes	Remove	Removing group	N113, N69	LOP CON
253	Coast redwood	28	Yes	Remove	8 feet from parking lot	N323, N100	LAU SAR	353	Coast redwood	22	Yes	Remove	Poor condition	N68, N66	LOP CON
254	Coast redwood	21	Yes	Remove	8 feet from parking lot	N101, N90	LAU SAR	354	Coast redwood	16	Yes	Remove	Poor condition	N64, N65	LOP CON
255	Coast redwood	29	Yes	Remove	2 feet from parking lot	N91, N92	LAU SAR	355	Coast redwood	17	Yes	Remove	Poor condition		
256	Coast redwood	30	Yes	Remove	3 feet from parking lot	N93, N94	LAU SAR	356	Coast redwood	10	Yes	Remove	Poor condition		
257	Coast redwood	12	Yes	Remove	Within parking lot	N247, N248	ACE PAL	357	Coast redwood	16	Yes	Remove	Poor condition		
258	Coast redwood	40	Yes	Remove	7 feet from parking lot	N95, N96	LAU SAR	358	Coast redwood	30	Yes	Remove	13 feet from parking lot	N89, N140	QUE REG, LOP CON
259	Coast redwood	35	Yes	Remove	7 feet from parking lot	N82, N81	LAU SAR	359	Coast redwood	45	Yes	Remove	8 feet from parking lot	N141, N142	LOP CON
260	Coast redwood	22	Yes	Remove	Within parking lot	N80, N78	LAU SAR	360	Coast redwood	22	Yes	Remove	Poor condition	N149, N148	LOP CON
261	Coast redwood	24	Yes	Remove	1 foot from parking lot	N70, N67	LAU SAR	361	Coast redwood	28	Yes	Remove	9 feet from parking lot	N147, N146	LOP CON
262	Coast redwood	33	Yes	Remove	2 feet from parking lot	N127, N128	LAU SAR	362	Coast redwood	23	Yes	Remove	9 feet from parking lot	N150, N129	LOP CON, ACE RUB
269	Coast redwood	9	Yes	Remove	Poor condition	N249, N250	ACE PAL	363	Coast redwood	25	Yes	Remove	7 feet from parking lot	N130, N131	ACE RUB
270	Camphor	11	No	Remove	Poor condition			364	Coast redwood	26	Yes	Remove	8 feet from parking lot	N132, N133	ACE RUB
271	Camphor	12	Yes	Remove	Poor condition	N229, N251	MAG GRA	365	Coast redwood	32	Yes	Remove	7 feet from parking lot	N134, N135	ACE RUB
273	Monterey pine	28	Yes	Remove	Poor condition	N26, N27	CAL DEC	366	Coast redwood	34	Yes	Remove	Within bioretention	N136, N137	ACE RUB
274	Camphor	12.9	Yes	Remove	Poor condition	N252, N253	MAG GRA	367	Coast redwood	33	Yes	Remove	Within bioretention	N169, N170	GIN BIL
275	Camphor	10	No	Remove	Poor condition			368	Coast redwood	22	Yes	Remove	5 feet from pathway	N171, N172	GIN BIL
277	Coast redwood	38	Yes	Remove	Near driveway	N145, N144	LAU SAR	369	Coast redwood	29	Yes	Remove	2 feet from path	N173, N174	GIN BIL
278	Coast redwood	32	Yes	Remove	Near driveway	N146, N143	LAU SAR	370	Coast redwood	34	Yes	Remove	2 feet from path	N205, N206	GIN BIL
279	Coast redwood	17	Yes	Remove	Near driveway			371	Coast redwood	20	Yes	Remove	2 feet from path	N207, N208	GIN BIL
280	Coast redwood	31	Yes	Remove	Within driveway	N105, N106	ACE RUB	372	Coast redwood	24	Yes	Remove	2 feet from path	N175, N176	MAG GRA
281	Coast redwood	23	Yes	Remove	Within driveway	N107, N110	ACE RUB	373	Coast redwood	15	Yes	Remove	2 feet from path		
282	Coast redwood	41	Yes	Remove	Within driveway	N111, N112	ACE RUB	374	Coast redwood	22	Yes	Remove	2 feet from path	N177, N86	MAG GRA
283	Coast redwood	24	Yes	Remove	Poor condition	N245, N246	ACE PAL	375	Coast redwood	19	Yes	Remove	2 feet from path		
288	Mexican fan palm	18	Yes	Remove	Low suitability for preservation	N303, N304	WAS FIL	376	Coast redwood	18	Yes	Remove	2 feet from path		
289	Monterey pine	22	Yes	Remove	Poor condition	N28, N13	CAL DEC	377	Coast redwood	17	Yes	Remove	5 feet from pathway		
292	Coast redwood	30	Yes	Remove	Poor condition	N166, N167	LAU SAR	378	Coast redwood	37	Yes	Remove	4 feet from path	N310, N311	ACE RUB
293	Coast redwood	26	Yes	Remove	Poor condition	N168, N180	LAU SAR	379	Coast redwood	22	Yes	Remove	Poor condition	N312, N313	ACE RUB
294	Coast redwood	18	Yes	Remove	Poor condition			380	Coast redwood	38	Yes	Remove	Poor condition	N314, N315	ACE RUB
295	Coast redwood	23	Yes	Remove	Low suitability for preservation	N179, N181	LAU SAR	381	Camphor	11	No	Remove	Poor condition		
296	Coast redwood	19	Yes	Remove	Poor condition			382	Camphor	20	Yes	Remove	Poor condition	N5, N6	CAL DEC
297	Coast redwood	27	Yes	Remove	Poor condition	N196, N198	LAU SAR	387	Camphor	13	Yes	Remove	Poor condition	N57, N58	GIN BIL
298	Coast redwood	22	Yes	Remove	Poor condition	N238, N237	PRU CAR	392	English walnut	11	No	Remove	Poor condition		
299	Coast redwood	32	Yes	Remove	Poor condition	N236, N228	PRU CAR, LAU SAR	393	Leyland cypress	7.5	No	Remove	Poor condition		

TREE REPLACEMENT TABLE

Tree Replacement List			Laguna Clara Santa Clara, CA November 11, 2019						Tree Replacement List			Laguna Clara Santa Clara, CA November 11, 2019						
Tag #	Species	Diameter	Protected	Disposition	Reason Removed	Replacement New Tree Numbers	Replacement Tree Species		Tag #	Species	Diameter	Protected	Disposition	Reason Removed	Replacement New Tree Numbers	Replacement Tree Species		
394	Camphor	15	Yes	Remove	Poor condition				483	Sweetgum	14	Yes	Remove	Filling in pond				
396	Camphor	10	No	Remove	Poor condition				484	Sweetgum	14	Yes	Remove	Filling in pond				
397	Camphor	9	No	Remove	Poor condition				485	Sweetgum	18	Yes	Remove	Filling in pond				
398	Camphor	9	No	Remove	Poor condition				487	Sweetgum	10	No	Remove	Filling in pond				
399	Camphor	13	Yes	Remove	Poor condition	N59, N60	GIN BIL		488	Italian alder	18	Yes	Remove	Filling in pond				
403	Evergreen pear	18	Yes	Remove	Within patio				489	Italian alder	13	Yes	Remove	Filling in pond	N123, N124	CUP SEM		
404	Sweetgum	15	Yes	Remove	Filling in pond				490	Evergreen pear	27	Yes	Remove	Within patio	N182, N183	PRU CAR		
405	Victorian box	13	Yes	Remove	Filling in pond	N61, N138	GIN BIL		491	Ginkgo	15	Yes	Remove	Filling in pond				
406	Sweetgum	12	Yes	Remove	Filling in pond	N139, N289	GIN BIL, LAG NAT		492	African fern-pine	16	Yes	Remove	Adjacent to path				
407	Sweetgum	14	Yes	Remove	Filling in pond	N292, N293	LAG NAT		493	African fern-pine	21	Yes	Remove	Adjacent to path				
408	Sweetgum	14	Yes	Remove	Filling in pond	N294, N295	LAG NAT		496	Ginkgo	17	Yes	Remove	Filling in pond				
409	Sweetgum	8	No	Remove	Filling in pond				497	Ginkgo	11	No	Remove	Filling in pond				
410	Sweetgum	15	Yes	Remove	Filling in pond				498	Coast redwood	35	Yes	Remove	Poor condition	N299, N99	ACE RUB		
411	Sweetgum	14	Yes	Remove	Filling in pond	N296, N197	LAG NAT		499	Sweetgum	15	Yes	Remove	Poor condition				
412	Sweetgum	17	Yes	Remove	Filling in pond				500	Sweetgum	13	Yes	Remove	Poor condition				
413	Sweetgum	14	Yes	Remove	Filling in pond				501	Sweetgum	16	Yes	Remove	Filling in pond				
414	Sweetgum	13	Yes	Remove	Filling in pond													
415	Sweetgum	17	Yes	Remove	Within bioretention													
416	Sweetgum	12	Yes	Remove	Filling in pond													
417	Sweetgum	12	Yes	Remove	Filling in pond													
418	Sweetgum	15	Yes	Remove	Filling in pond													
419	Pin oak	14	Yes	Remove	Filling in pond													
420	Pin oak	10	No	Remove	Filling in pond													
421	Pin oak	9	No	Remove	Filling in pond													
423	Sweetgum	13	Yes	Remove	Filling in pond													
424	Sweetgum	12	Yes	Remove	Filling in pond													
425	Sweetgum	13	Yes	Remove	Filling in pond													
426	Sweetgum	14	Yes	Remove	Filling in pond													
427	Sweetgum	15	Yes	Remove	Filling in pond													
428	Mexican fan palm	19	Yes	Remove	Filling in pond	N305, N306	WAS FIL											
431	Victorian box	7,7	No	Remove	Filling in pond													
432	Monterey pine	20	Yes	Remove	Filling in pond	N12, N11	CAL DEC											
433	Victorian box	15	Yes	Remove	Filling in pond													
435	Mexican fan palm	12	Yes	Remove	Filling in pond	N204, N199	WAS FIL, LAG NAT											
443	Saucer magnolia	6,3	No	Remove	Within path													
444	Saucer magnolia	6,5	No	Remove	Poor condition													
445	Saucer magnolia	8	No	Remove	Poor condition													
446	Saucer magnolia	5	No	Remove	Poor condition													
447	Japanese maple	13	Yes	Remove	Filling in pond	N223, N224	PRU CAR											
448	Japanese maple	16	Yes	Remove	Filling in pond													
449	Japanese maple	11	No	Remove	Filling in pond													
450	European white birch	9	No	Remove	Filling in pond													
451	European white birch	9	No	Remove	Filling in pond													
452	Coast redwood	17	Yes	Remove	Filling in pond													
454	European white birch	7	No	Remove	Filling in pond													
455	Fig	11,8	Yes	Remove	Filling in pond	N225, N199	PRU CAR, MAG GRA											
456	Coast redwood	21	Yes	Remove	Filling in pond	N297, N298	ACE RUB											
457	European white birch	12	Yes	Remove	Filling in pond													
458	Mexican fan palm	18	Yes	Remove	Filling in pond	N307, N308	WAS FIL											
459	Mexican fan palm	21	Yes	Remove	Filling in pond	N309, N228	WAS FIL, LAU SAR											
460	Coast redwood	17	Yes	Remove	Filling in pond													
461	Coast redwood	9	Yes	Remove	Filling in pond	N47, N48	LAG NAT											
463	Mexican fan palm	19,16,15	Yes	Remove	Filling in pond	N284, N285	WAS FIL											
465	Japanese maple	12	Yes	Remove	Within patio	N49, N50	LAG NAT											
466	Japanese maple	10,8	Yes	Remove	Within patio	N51, N52	LAG NAT											
467	European white birch	16	Yes	Remove	6 foot wide tree well													
468	Ginkgo	13	Yes	Remove	6 foot wide tree well	N209, N218	GIN BIL											
469	Camphor	19	Yes	Remove	6 foot wide tree well													
471	Ginkgo	10	No	Remove	Within patio													
472	Ginkgo	12	Yes	Remove	Filling in pond	N219, N220	GIN BIL											
473	Ginkgo	15	Yes	Remove	Filling in pond	N221, N222	GIN BIL											
474	Ginkgo	9	No	Remove	Filling in pond													
475	European white birch	13	Yes	Remove	Filling in pond	N53, N54	GIN BIL											
476	European white birch	14	Yes	Remove	Filling in pond	N55, N56	GIN BIL											
477	European white birch	8	No	Remove	Filling in pond													
478	Sweetgum	14	Yes	Remove	Filling in pond													
479	Sweetgum	14	Yes	Remove	Filling in pond													
480	Sweetgum	15	Yes	Remove	Filling in pond													
481	Sweetgum	18	Yes	Remove	Filling in pond													
482	Sweetgum	15	Yes	Remove	Filling in pond													

TREE REPLACEMENT TABLE

