DOCKETED	
Docket Number:	19-SPPE-04
Project Title:	SJ2
TN #:	230763
Document Title:	SJC02 Data Center SPPE Application Volume 2 Appendix 1A to Appendix 3-5A
Description:	N/A
Filer:	Jerry Salamy
Organization:	Jacobs
Submitter Role:	Applicant Consultant
Submission Date:	11/15/2019 3:36:02 PM
Docketed Date:	11/15/2019

3.1 AESTHETICS

3.1.1 <u>Environmental Setting</u>

3.1.1.1 *Regulatory Framework*

San José General Plan

The Envision San José 2040 General Plan include policies applicable to all development projects in San José.

Policy CD-1.1: Require the highest standards of architecture and site design, and apply strong design controls for all development projects, both public and private, for the enhancement and development of community character and for the proper transition between areas with different types of land uses.

Policy CD-1.18: Encourage the placement of loading docks and other utility uses within parking structures or at other locations that minimize their visibility and reduce their potential to detract from pedestrian activity.

Policy CD-1.23: Further the Community Forest Goals and Policies in this Plan by requiring new development to plant and maintain trees at appropriate locations on private property and along public street frontages. Use trees to help soften the appearance of the built environment, help provide transitions between land uses, and shade pedestrian and bicycle areas.

Policy CD-4.9: For development subject to design review, ensure the design of new or remodeled structures is consistent or complementary with the surrounding neighborhood fabric (including but not limited to prevalent building scale, building materials, and orientation of structures to the street).

Policy CD-10.2: Require that new public and private development adjacent to Gateways and freeways (including 101, 880, 680, 280, 17, 85, 237, and 87), and Grand Boulevards consist of high-quality materials, and contribute to a positive image of San José.

Alviso Master Plan

The following policies are specific to aesthetics and visual resources and are specific to the proposed project.

Environmental Protection Policy 3: The riparian corridors adjacent to Coyote Creek and Guadalupe River should be preserved intact. Any development adjacent to the waterways should follow the City's Riparian Corridor policies.

City of San José Riparian Corridor Policy Study

The City of San José's Riparian Corridor Policy Study defines a riparian corridor as any defined stream channel, including the area up to the bank full-flow line, as well as all riparian (streamside vegetation in contiguous adjacent uplands. The policy study states that riparian setbacks should be measured 100 feet from the outside edges of riparian habitat or the top of bank, whichever is greater. The following guidelines of the policy study are applicable to determining aesthetic impacts for projects adjacent to Coyote Creek.

Guideline 2B: Glare. Building materials should not produce glare that would adversely impact the riparian corridor. Windows should not be mirrored but otherwise their use is not limited.

Guideline 2E: Lighting. All trail corridors, except for the Guadalupe River Downtown, are closed after sunset, and as such do not have lighting (except for security lighting at bridge under crossings). For all other developments, lighting within the corridor and setback areas should be avoided. Lighting on development sites should be designed and sited to avoid light and glare impacts to wildlife within the riparian corridor. Any lighting located adjacent to riparian areas should be as low as feasible in height (bollard lighting is preferred) and must be directed downward with light sources not visible from riparian areas.

3.1.1.2 *Existing Conditions*

Visual Character of the Project Site

The project site is primarily fallow farmland and can be seen from SR 237, but is not readily visible from Zanker Road or the east side of Coyote Creek, where a levee blocks views of the site (See Photos 1 and 2). Development on-site includes two single-family houses, a mobile home, and three farm-related accessory structures located near the southern end of the site. One of the single-family houses, located at the southeastern corner of the site, is a one-story Craftsman Prairie-style house with Mission Revival influences (Edgar A. Jackson House), as shown in Photo 3.

The structures on the site are mostly hidden by large shrubs and trees, as shown in Photos 4, 5, 6, and 7. Vehicular access to the houses and accessory structures is provided by a paved pathway in the central portion of the site.

Surrounding Land Uses

The project area is primarily agricultural land. The project site is bounded by Alviso-Milpitas Road to the south, lands of the RWF and the LECEF and PG&E substation to the west, lands of the RWF to the north, and Coyote Creek to the east.

Alviso-Milpitas Road becomes Ranch Road at Coyote Creek and provides trail and limited vehicle access to McCarthy Boulevard in Milpitas. South of Alviso-Milpitas Road is State Route 237 (SR 237), a six-lane freeway that extends in an east/west direction between Sunnyvale and Milpitas, as shown in Photo 9.

West of the project site is the LECEF facility and associated electrical substation, as shown on Photo 10. The energy facility is surrounded by a wall and a chain link fence. There is a berm located immediately adjacent to the fence with trees and shrubs. High power transmission lines are located west of the facility.

The San José-Santa Clara Regional Wastewater Facility is located north and northwest of the project site. The main building, located on the west side of Zanker Road, is primarily glass and stucco. The building is an irregular-shaped two-story building and is set back from the roadway with a surface parking lot and landscaped areas. Drying beds for the RWF are located immediately north of the

PHOTO 1: View of the project site, looking south.

PHOTO 2: View of the project site, looking northeast.

PHOTOS 1 AND 2

PHOTO 3: View of existing Edgar A. Jackson house in the southeastern corner of the site, looking north from Alviso-Milpitas Road.

PHOTO 4: View of the farm complex in the south central portion of the site, looking northwest from the paved pathway.

PHOTO 5: View of existing farm complex structures on-site, looking northwest from the paved pathway.

PHOTO 6: View of the prefabricated house within the farm complex, looking west from the main house.

PHOTO 7: View of an accessory structure looking west, from the paved pathway.

PHOTO 8: View of farm complex structure on the project site, looking northwest from the paved pathway.

PHOTO 9: View of surrounding development, looking northwest from the project site. The LECEF can be seen in the background.

PHOTO 10: Alviso – Milpitas Road, looking west along the southern boundary of the site. SR 237 is located on the left side of the photo.

project site. The Silicon Valley Advanced Water Purification Center, which is operated by the Santa Clara Valley Water District, is located northwest of the site at 4190 Zanker Road.

East of the project site is Coyote Creek, which has a raised levee on both banks. Due to the lower elevation of the site, views of the site from the east side of Coyote Creek in Milpitas are limited.

3.1.1.3 *Scenic Views and Resources*

The project site and the surrounding area are relatively flat and, as a result, the site is only visible from the immediate area. The project area is not located within a designated scenic area or corridor based on the City of San José General Plan. In addition, the project site is not located along or visible from a state-designated scenic highway.[3] There are no scenic views within the project area.

3.1.1.4 *Light and Glare*

Sources of light and glare in the project area include security lights, vehicular headlights, internal building lights, and freeway lighting.

3.1.2 <u>Aesthetic Impacts</u>

3.1.2.1 *Thresholds of Significance*

For the purposes of this EIR, an aesthetic impact is considered significant if the project would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.2.2 *Consistency with Plans*

The proposed project would be required to go through architectural review and comply with design standards established by the City for light industrial development. For these reasons, the project would be consistent with General Plan Policies CD-1.1, CD-1.18, CD-1.23, CD-4.9, and CD-10.2, the Alviso Master Plan Environmental Protection Policy 3 and the Riparian Corridor Policy Study Guidelines 2B and 2E.

3.1.2.3 *Visual and Aesthetics Impacts*

Aesthetic values are, by their nature, subjective. Opinions as to what constitutes a degradation of visual character would differ among individuals. The best available means for assessing what constitutes a visually acceptable standard for new structures are the City's Design Guidelines and

---

[3] California Department of Transportation. *California Scenic Highway Mapping System*. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ Accessed December 8, 2016.

policies adopted by the City Council. All future development on-site would be reviewed for consistency with applicable design guidelines and policies prior to issuance of planning permits.

The proposed project includes two development options. The light industrial development option proposes seven two-story light industrial buildings with a maximum height of 45 feet. The data center/light industrial development option proposes four buildings for the data center and a PG&E substation. The tallest structure would have a maximum height of 100 feet and the remaining three buildings would have a maximum height of 55 feet. Both project options would be visible from the nearby roadways including Alviso-Milpitas Road, Zanker Road, and SR 237 as well as from the Coyote Creek Trail.

The CEQA thresholds of significance state that a project would have a significant visual impact if it would have a substantial adverse effect on a scenic vista, substantially damage scenic resources (including, but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway), or substantially degrade the existing visual character or quality of a project site. While views of the surrounding hillsides are visible, the area is relatively flat and prominent viewpoints, other than the adjacent LECEF facility, SR 237, and the levee, are limited. There are no City, County, or state designated scenic vistas, highways, or other scenic resources within the project area.

As mentioned previously, the project area is primarily agricultural land. While both development options would alter the visual character of the project site compared to existing conditions, both development options would be comparable in massing and scale to the existing industrial uses near the site. The project would not have a substantial effect on scenic vistas, damage scenic resources, or substantially degrade the existing visual character of the site and its surroundings. **(Less Than Significant Impact)**

3.1.2.4 *Light and Glare*

Under both development options, the site would be visible from Alviso-Milpitas Road, SR 237, Zanker Road, and the Coyote Creek trail. Sources of light and glare include streetlights, parking lot lots, security lights, vehicular headlights, internal building lights, and reflective building surfaces and windows.

The General Plan FPEIR concluded that while new development and redevelopment under the General Plan could be new sources of nighttime light and daytime glare, implementation of the adopted plans and existing regulations would avoid substantial light and glare impacts. Development on-site would comply with General Plan policies, including City Council Lighting Policy 4-3[4]. In addition, the project would be required to comply with Guideline 2B and 2E of the City's Riparian Corridor Policy Study. As a result, the proposed project would not significantly impact adjacent land uses with increased nighttime light levels or daytime glare from building materials. **(Less Than Significant Impact)**

3.1.3 Mitigation and Avoidance Measures for Visual and Aesthetic Impacts

No project specific mitigation is required or proposed.

---

[4] This policy requires private development to use energy-efficient outdoor lighting that is fully shielded and not directed skyward.

3.1.4 Conclusion

Implementation of the project under each development option would have a less than significant visual impact. **(Less Than Significant Impact)**

3.2 AIR QUALITY

The following discussion is based on an air quality analysis prepared by *Illingworth & Rodkin* in March 2017. The report can be found in Appendix B.

3.2.1 Environmental Setting

3.2.1.1 *Regulatory Framework*

The significance of a pollutant concentration is determined by comparing the pollutant levels to an appropriate ambient air quality standard. The standards set the level of pollutant concentrations allowable while protecting general public health and welfare.

The Federal Clean Air Act (Federal CAA) establishes pollutant thresholds for air quality in the United States. In addition to being subject to Federal requirements, California has its own, more stringent, regulations under the California Clean Air Act (California CAA). At the Federal level, the U.S. Environmental Protection Agency (EPA) administers the CAA. The California CAA is administered by the California Air Resources Board (CARB) at the state level and by the Air Quality Management District's at the regional and local levels. The Bay Area Air Quality Management District (BAAQMD) regulates air quality in the nine-county Bay Area.

The U.S. EPA is responsible for establishing the National Ambient Air Quality Standards (NAAQS) which are required under the Federal CAA. The U.S. EPA regulates emission sources that are under the exclusive authority of the Federal government, such as aircraft, ships, and certain types of locomotives. The agency also established various emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by CARB.

California Air Resources Board

As stated above, CARB (which is part of the California EPA) is responsible for meeting the state requirements of the Federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA requires all air districts in the state to achieve and maintain CAAQS. CARB regulates mobile air pollution sources such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB has established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. CARB also conducts or supports research into the effects of air pollution on the public and develops approaches to reduce air pollutant emissions.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is primarily responsible for ensuring that the national and state ambient air quality standards are attained and maintained in the Bay Area. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. Table 3.2-1 identifies the major criteria pollutants, characteristics, health effects, and typical sources for the Bay Area.

Table 3.2-1: Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sun light on ozone precursors. Often called photochemical smog.	- Eye Irritation - Respiratory function impairment	The major sources of ozone precursors are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	- Impairment of oxygen transport in the bloodstream - Aggravation of cardiovascular disease - Fatigue, headache, confusion, dizziness - Can be fatal in the case of very high concentrations	Automobile exhaust, combustion of fuels, combustion of wood in wood stoves and fireplaces.
Nitrogen Dioxide	Reddish-brown gas that discolors the air, formed during combustion.	- Increased risk of acute and chronic respiratory disease	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	- Aggravation of chronic obstruction lung disease - Increased risk of acute and chronic respiratory disease	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter	Solid and liquid particles of dust, soot, aerosols and other matter that are small enough to remain suspended in the air for a long period of time.	- Aggravation of chronic disease and heart/lung disease symptoms	Combustion, automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.

BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, and many other associated activities. BAAQMD has jurisdiction over the nine-county Bay Area, including San José.

National and State Ambient Air Quality Standards

The ambient air quality in a given area depends on the quantities of pollutants emitted within the area, transport of pollutants to and from the surrounding areas, local and regional meteorological conditions, and the surrounding topography of the air basin. Air quality is described by the concentration of various pollutants in the atmosphere. The significance of the pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population.

As required by the Federal CAA, the NAAQS have been established for six major air pollutants; carbon monoxide (CO), nitrogen oxides (NO_x), ozone, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur oxides (SO_x), and lead (Pb). Pursuant to the California CAA, the State of California has also established ambient air quality standards. The CAAQS are generally more stringent than the corresponding Federal standards and incorporate additional standards for pollutants such as sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Both state and federal standards are summarized in Table 3.2-2. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for adverse air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare. Because CAAQS are more stringent than NAAQS, CAAQS are used as the applicable standard in this analysis.

Table 3.2-2: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
			Primary	Secondary
Ozone	1-hour	0.09 ppm	---	Same as primary
	8-hour	0.07 ppm	0.075 ppm	---
Carbon monoxide	1-hour	20 ppm	35 ppm	---
	8-hour	9.0 ppm	9.0 ppm	---
Nitrogen dioxide	1-hour	0.18 ppm	0.10 ppm	---
	Annual	0.03 ppm	0.053 ppm	Same as primary
Sulfur dioxide	1-hour	0.25 ppm	0.075 ppm	---
	3-hour	---	---	0.5 ppm
	24-hour	0.04 ppm	---	---
PM_{10}	24-hour	50 $\mu g/m^3$	150 $\mu g/m^3$	Same as primary
	Annual	20 $\mu g/m^3$	---	---
$PM_{2.5}$	24-hour	---	35 $\mu g/m^3$	Same as primary
	Annual	12 $\mu g/m^3$	15 $\mu g/m^3$	Same as primary
Lead	Calendar Quarter	---	1.5 $\mu g/m^3$	Same as primary
	30-day average	1.5 $\mu g/m^3$	---	---

Source: California Air Resources Board, September 2010.

Regional Clean Air Plans

The BAAQMD and other agencies prepare clean air plans in response to the state and federal CAA. The City of San José also has General Plan policies that encourage development that reduces air quality impacts. In addition, BAAQMD has developed CEQA Guidelines to assist local agencies in evaluating and mitigating air quality impacts in CEQA documents. BAAQMD's most recently adopted plan is the Bay Area 2017 Clean Air Plan (2017 CAP). Consistent with the GHG reduction targets adopted by the state of California, the 2017 CAP lays the groundwork for the BAAQMD's long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

The 2017 CAP defines an integrated, multi-pollutant control strategy to reduce emissions of particulate matter, TACs, ozone precursors, and GHGs. The proposed control strategy is designed to complement efforts to improve air quality and protect the climate that are being implemented by partner agencies at the State, regional, and local scale. The control strategy encompasses 85 individual control measures that describe specific actions to reduce emissions of air and climate pollutants from the full range of emission sources and is based on the following four key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Decarbonize our energy system.

Key elements in the control strategy are described below.

Stationary Sources:

- Decrease emissions of GHGs and criteria air pollutants through a region-wide strategy to reduce combustion and improve combustion efficiency at industrial facilities, beginning with the three largest sources of emissions: oil refineries, power plants, and cement plants.
- Reduce methane emissions from landfills, and from oil and natural gas production and distribution.
- Reduce emissions of toxic air contaminants by adopting more stringent thresholds and methods for evaluating toxic risks at existing and new facilities.

Transportation:

- Reduce motor vehicle travel by promoting transit, bicycling, walking, and ridesharing.
- Implement pricing measures to reduce travel demand.
- Direct new development to areas that are well-served by transit, and conducive to bicycling and walking.
- Accelerate the widespread adoption of electric vehicles.
- Promote the use of clean fuels and low- or zero- carbon technologies in trucks and heavy-duty equipment.

Buildings and Energy:

- Expand the production of low-carbon, renewable energy by promoting on-site technologies such as rooftop solar, wind, and ground-source heat pumps.
- Support the expansion of community choice energy programs throughout the Bay Area.
- Promote energy and water efficiency in both new and existing buildings.

- Promote the switch from natural gas to electricity for space and water heating Bay Area buildings.

San José General Plan

The Envision San José 2040 General Plan includes policies applicable to all development projects in San José.

Policy MS-10.1: Assess projected air emissions from new development in conformance with the BAAQMD CEQA Guidelines and relative to state and federal standards. Identify and implement air emissions reduction measures.

Policy MS-13.1: Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At minimum, conditions shall conform to construction mitigation measures recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.

Policy MS-13.2: Construction and/or demolition projects that have the potential to disturb asbestos (from soil or building material) shall comply with all the requirements of the California Air Resources Board's air toxic control measures (ATCMs) for Construction, Grading, Quarrying, and Surface Mining Operations.

Policy TR-6.4: Plan industrial and commercial development so that truck access through residential areas is avoided. Minimize truck travel on streets designated in this General Plan as Residential Streets.

Policy TR-7.1: Require large employers to develop TDM programs to reduce the vehicle trips generated by their employees.

3.2.1.2 *Existing Conditions*

Air quality is determined by the concentration of various pollutants in the atmosphere. Units of concentration are expressed in parts per million (ppm) or micrograms per kilograms (µg/kg).
The amount of a given pollutant in the atmosphere is determined by the amount of pollutants released within an area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, and the surrounding topography of the air basin. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sun light.

San José is located in the southern portion of the San Francisco Bay Area Air Basin. The proximity of this location to both the Pacific Ocean and San Francisco Bay has a moderating influence on the climate. Northwest and northerly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula. Winds from these directions carry pollutants released by autos and factories from upwind areas of the Peninsula toward San José, particularly during the summer months. Winds are lightest on average in fall and winter. Every year in fall and winter there are periods of several days when winds are very light and local pollutants can build up.

Air quality standards for ozone are typically exceeded when relatively stagnant conditions occur for periods of several days during the warmer months of the year. Weak wind flow patterns combined with strong inversions substantially reduce normal atmospheric mixing. Key components of ground-level ozone formation are sunlight and heat. Significant ozone formation, therefore, only occurs during the months from late spring through early fall. Prevailing winds during the summer and fall can transport and trap ozone precursors from the more urbanized portions of the Bay Area. Meteorological factors make air pollution potential in the Santa Clara Valley quite high.

Pollutants can be diluted by mixing in the atmosphere both vertically and horizontally. Vertical mixing and dilution of pollutants are often suppressed by inversion conditions, when a warm layer of air traps cooler air close to the surface. During the summer, inversions are generally elevated above ground level, but are present over 90 percent of the time in both the morning and afternoon. In winter, surface-based inversions dominate in the morning hours, but frequently dissipate by afternoon.

Topography can restrict horizontal dilution and mixing of pollutants by creating a barrier to air movement. The South Bay has significant terrain features that affect air quality. The Santa Cruz Mountains and Diablo Range on either side of the South Bay restrict horizontal dilution, and this alignment of the terrain also channels winds from the north to south, carrying pollution from the northern Peninsula toward San José.

The combined effects of moderate ventilation, frequent inversions that restrict vertical dilution and terrain that restrict horizontal dilution give San José a relatively high atmospheric potential for pollution compared to other parts of the San Francisco Bay Air Basin and provide a high potential for transport of pollutants to the east and south.

Carbon Monoxide

Carbon monoxide, a colorless and odorless gas, interferes with the transfer of oxygen to the brain. It can cause dizziness and fatigue, and can impair central nervous system functions. Highest carbon monoxide concentrations measured in the South Bay Area have been well below the national and state ambient standards. Since the primary sources of carbon monoxide are cars and trucks, highest concentrations would be found near congested roadways that carry large volumes of traffic. Carbon monoxide emitted from a vehicle is highest near the origin of a trip and considerably lower once the automobile is warmed up (usually five to ten minutes into a trip). This is different, however, for vehicles of different ages, where older cars require a longer warm up period.

Ozone

While O_3 serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants. Ozone concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Short-term O_3 exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis.

Sensitivity to O_3 varies among individuals, but about 20 percent of the population is sensitive to O_3, with exercising children being particularly vulnerable. Ozone is formed in the atmosphere by a complex series of photochemical reactions that involve "ozone precursors" that are two families of pollutants: oxides of nitrogen (NOx) and reactive organic gases (ROG). Nitrogen oxides and ROG are emitted from a variety of stationary and mobile sources. While NO_2, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not in that category, but are included in this discussion as O_3 precursors. The U.S. EPA recently established a new more stringent standard for O_3 of 0.75 ppm for 8-hour exposures, based on a review of the latest new scientific evidence.

Nitrogen Dioxide

Nitrogen dioxide, a reddish-brown gas, irritates the lungs. Exposure to NO_2 can cause breathing difficulties at high concentrations. Clinical studies suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children. Similar to O_3, NO_2 is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. Nitric oxide and NO_2 are collectively referred to as NO_x and are major contributors to O_3 formation. Nitrogen oxides are emitted from combustion of fuels, with higher rates at higher combustion temperatures. Nitrogen dioxide also contributes to the formation of PM_{10} (see discussion of PM_{10} below). Monitored levels in the Bay Area are well below ambient air quality standards.

PM_{10} and $PM_{2.5}$

Respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) consist of particulate matter that is ten microns or less in diameter and 2.5 microns or less in diameter, respectively, and represent fractions of particulate matter that can be inhaled and cause adverse health effects. Both PM_{10} and $PM_{2.5}$ are health concerns, particularly at levels above the federal and state ambient air quality standards. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, and acute and chronic respiratory symptoms such as shortness of breath and labored breathing. Children are more susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are still developing.

Both PM_{10} and $PM_{2.5}$ pose a greater health risk than larger particles because these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract, increasing the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Whereas larger particles tend to collect in the upper portion of the respiratory system, $PM_{2.5}$ is miniscule and can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility. Most stations in the Bay Area reported exceedances of the state standard on the same fall/winter days as reported in the South Bay. This indicates a regional air quality problem.

The primary sources of these pollutants are wood smoke and local traffic. Meteorological conditions that are common during fall/winter days produce calm winds and strong surface-based inversions that trap pollutants near the surface. The high levels of PM_{l0} result in not only health effects, but also reduced visibility.

Air Monitoring Data

Air quality in the region is controlled by the rate of pollutant emissions and meteorological conditions. Meteorological conditions, such as wind speed, atmospheric stability, and mixing height may all affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions, while frequent, short-term variations result from changes in atmospheric conditions. The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. BAAQMD monitors air quality conditions at over 30 locations throughout the Bay Area. There are several BAAMQD monitoring stations near in and near San José.

As shown in Table 3.2-3, violations of state and federal standards at the downtown San José monitoring station (the nearest monitoring station to the project site) during the 2013-2015 period (the most recent years for which data is available) include high levels of ozone, PM_{10}, and $PM_{2.5}$. Violations of the carbon monoxide standard have not been recorded since 1992.

Table 3.2-3: Number of Ambient Air Quality Standards Violations (2013-2015)[5]

Pollutant	Standard	Days Exceeding Standard		
		2013	2014	2015
SAN JOSÉ CENTRAL STATION				
Ozone	State 1-hour	1	0	0
	Federal 8-hour	1	0	2
Carbon Monoxide	Federal 8-hour	0	0	0
	State 8-hour	0	0	0
Nitrogen Dioxide	State 1-hour	0	0	0
PM_{10}	Federal 24-hour	0	0	0
	State 24-hour	5	1	1
$PM_{2.5}$	Federal 24-hour	6	2	2

Source: Bay Area Management District, Bay Area Air Pollution Summary

Attainment Status

The Federal CAA and the California CAA of 1988 require that CARB, based on air quality monitoring data, designate portions of the state where federal or state ambient air quality standards are not met as "nonattainment areas". Because of the differences between the federal and state standards, the designation of "nonattainment area" is different under the federal and state legislation. Under the California CAA, Santa Clara County is a nonattainment area for ozone and PM_{10}. The County is either in attainment or unclassified for other pollutants. Under the Federal CAA, the entire Bay Area region is classified as nonattainment for the 24-hour $PM_{2.5}$ standard. The U.S. EPA grades the region as in attainment or unclassified for all other air pollutants, including PM_{10}.

[5] Bay Area Air Quality Management District. Annual Bay Area Air Quality Summaries. http://www.baaqmd.gov/about-air-quality/air-quality-summaries. Accessed November 1, 2016.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified children under 14, the elderly over 65, and people with cardiovascular and chronic respiratory diseases as people most likely to be affected by air pollution. These groups are classified as sensitive receptors. Locations that may contain a high concentration of sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks.

Figure 3.2-1: Project Site, Influence Area and Nearest Sensitive Receptors

As shown on Figure 3.2-1, above, the nearest sensitive receptors to the project site are existing residences along Murphy Ranch Road in Milpitas, about 1,650 feet south of the southern project boundary. Other sensitive receptor locations are residences located approximately 3,100 feet east in Milpitas and mobile homes located approximately 3,400 feet southwest in San José. There is a daycare facility along Barber Lane, about 3,500 feet southeast of the site.[6] The LECEF located west of the proposed project site is an industrial use and is not considered to be a sensitive receptor.

3.2.2 <u>Air Quality Impacts</u>

3.2.2.1 *Thresholds of Significance*

For the purposes of this EIR, an air quality impact is considered significant if the project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

[6] BAAQMD typically defines the area of impact for site generated emissions as 1,000 feet.

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

The *BAAQMD CEQA Guidelines*[7] provide the following definitions of a significant air quality impact:

- A cumulatively considerable net increase of any criteria pollutant or a precursor to that pollutant for which the project region is non-attainment under an applicable national or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for O_3 precursors). This is judged by comparing direct and indirect project emissions to the BAAQMD significance thresholds of 54 pounds per day for ROG, NOx, or $PM_{2.5}$, and 82 pounds per day for PM_{10}. Annual significance thresholds are 10 tons per year for ROG, NOx, or $PM_{2.5}$, and 15 tons per year for PM_{10}.
- A substantial contribution to an existing or projected violation of an ambient air quality standard would result if the project would cause an exceedance of an ambient air quality standard.
- Expose sensitive receptors or the general public to substantial pollutant concentrations. This is evaluated by assessing the health risk in terms of cancer risk or hazards posed by the placement of new sources of air pollutant emissions near existing sensitive receptors or placement of new sensitive receptors near existing sources.
- Create or expose a substantial number of people to objectionable odors. This is evaluated based on the potential for the project to generate odors that could affect nearby sensitive receptors in a manner that would cause frequent complaints.
- Conflict with or obstruct implementation of the applicable air quality plan. This is evaluated by comparing the project effects on projections used in the latest Bay Area CAP and evaluating the plan features that would implement CAP Transportation Control Measures.

In 2009, BAAQMD published Proposed Thresholds of Significance. The CEQA Guidelines prepared by BAAQMD in 2011 used these significance criteria to evaluate the impacts caused by projects. BAAQMD's adoption of the 2011 thresholds was called into question by a trial court order issued March 5, 2012, in *California Building Industry Association v. BAAQMD* (Alameda Superior Court Case Number RGI0548693) that determined the adoption of the thresholds was a project under CEQA but did not address the substantive validity, merits or scientific basis of the thresholds.

The California Court of Appeal for the Fifth District reversed the trial court decision and the Court of Appeal's decision was appealed to the California Supreme Court. In a December 2015 opinion [*California Building Industry Association v. Bay Area Air Quality Management District,* 62 Cal. 4th 369 (No. S 213478)] the California Supreme Court confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. The opinion did not negate the BAAQMD thresholds.

---

[7] Bay Area Air Quality Management District. California Environmental Quality Act, Air Quality Guidelines. 2011. http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx

The issues in the California Building Industry Association v. BAAQMD lawsuit are not relevant to the scientific basis of BAAQMD's analysis of what levels of pollutants should be deemed significant. The City has determined that the scientific information in BAAQMD's proposed thresholds of significance analysis provides substantial evidence to support the 2011 thresholds and, therefore, has determined the thresholds and methodologies from BAAQMD's May 2011 CEQA Air Quality Guidelines are appropriate for use in this analysis to determine whether there would be any project operational impacts in terms of criteria pollutants, toxic air contaminants and odors. These CEQA Air Quality thresholds were used to evaluate air quality impacts from the project.

3.2.2.2 *Consistency with Plans*

The most recent Clean Air Plan, the 2017 CAP, was adopted by BAAQMD in April 2017. The 2017 CAP focuses on two closely-related BAAQMD goals: protecting public health and protecting the climate. The consistency of the proposed project with this regional plan is primarily a question of the consistency with the population/employment assumptions utilized in developing the 2017 CAP, which were based on ABAG Projections. The proposed project is consistent with the General Plan and, as a result, is consistent with the current growth projections in the 2017 CAP.

In addition, determining the consistency with the 2017 CAP involves assessing whether applicable control measures contained in the 2017 CAP are implemented. The 2017 CAP includes about 85 control measures, consistent with the state's climate protection goals aimed at reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. These control measures are divided into nine control measure categories that include:

- Stationary (Industrial) Sources;
- Transportation;
- Energy;
- Agriculture;
- Water;
- Waste
- Buildings;
- Natural and Working Lands; and
- Super-GHG Pollutants

The consistency of the project is evaluated with respect to each set of applicable control measures in Table 3.2-4 below.

Table 3.2-4: Bay Area 2017 Clean Air Plan Applicable Control Measures		
Control Measures	**Description**	**Project Consistency**
Transportation Measures		
Bicycle and Pedestrian Access and Facilities	Encourage planning for bicycle and pedestrian facilities in local plans e.g., general and specific plans, fund bike lanes, routes, paths and bicycle parking facilities.	The project would include secure bicycle parking spaces consistent with City standards. Due to the location of the project site and the nature of the project, improved pedestrian access is not proposed as part of the project. The site is, however, within walking distance to a nearby shopping center and the Coyote Creek Trail. The project is consistent with this control measure.
Energy Measures		
Urban Heat Island Mitigation	Develop and urge adoption of a model ordinance for "cool parking" that promotes the use of cool surface treatments for new parking facilities, as well existing surface lots undergoing resurfacing. Develop and promote adoption of model building code requirements for new construction or re-roofing/roofing upgrades for commercial and residential multi-family housing.	The project would be required to comply with the City's Green Building Ordinance which will increase building efficiency over standard construction. Therefore, the project is consistent with this control measure.
Natural and Working Lands Measures		
Urban Tree Planting	Develop or identify an existing model municipal tree planting ordinance and encourage local governments to adopt such an ordinance. Include tree planting recommendations, the Air District's technical guidance, best management practices for local plans, and CEQA review.	As designed, the project will plant new trees on-site to conform to the City's Tree Ordinance. With the required tree replacement ratios, the site would have more trees than under current conditions. The additional trees will help with the absorption of air pollutants and will help to reduce the urban heat island effect on-site. The proposed project, therefore, is consistent with this control measure.

The project includes transportation and energy control measures and is consistent with the population projections in the 2017 CAP. The project is also consistent with the City's General Plan. The project by itself, therefore, would not result in a significant impact related to consistency with the Bay Area 2017 CAP. **(Less Than Significant Impact)**

San José General Plan

As discussed below, the proposed project includes mitigation measures, best management practices, and permit conditions to reduce and/or avoid significant emissions impacts. Therefore, the project is consistent with Policies MS-10.1, MS-13.1, and MS-13.3.

3.2.2.3 *Operational Impacts to Regional and Local Air Quality*

Criteria Pollutants

A detailed air quality assessment was completed to address operational air quality impacts from the proposed development on-site. Full operation of the site was assumed to occur in 2022. Table 3.2-5 shows estimated daily air emissions from operation of the proposed project based upon a detailed air analysis using CalEEMod.

Table 3.2-5: Operational Emissions for the Project [Tons Per Year (Pounds Per Day)]

Emission Source	ROG	NOx	CO	PM_{10}	$PM_{2.5}$
Light Industrial Development Only					
Light Industrial Mobile and Area	7.45 (40.8)	9.81 (53.7)	25.3 (138.6)	7.05 (38.6)	2.03 (11.1)
BAAQMD Thresholds	**10 (54)**	**10 (54)**	**----**	**15 (82)**	**10 (54)**
Significant	*No*	*No*	----	*No*	*No*
Data Center and Light Industrial Development					
Data Center Mobile & Area	2.10 (11.5)	0.89 (4.9)	1.82 (10.0)	0.29 (1.6)	0.10 (0.5)
Data Center Generators – Maximum Emissions Option	0.65 (3.6)	13.16 (72.1)	1.08 (5.9)	0.14 (0.8)	0.13 (0.7)
Data Center Generators – Testing Emissions Option (Maximum)	0.18 (1.0)	2.89 (15.8)	0.69 (3.8)	0.07 (0.4)	0.07 (0.4)
Cooling Towers	0.00 (0.0)	0.00 (0.0)	0.00 (0.0)	0.15 (0.8)	0.15 (0.8)
Light Industrial Mobile & Area	4.52 (24.8)	5.95 (32.6)	15.35 (84.1)	2.62 (14.4)	0.82 (4.5)
Total Emissions	7.3 (39.9)	20.0 (122.7)	18.3 (100.0)	3.2 (17.6)	1.2 (6.5)
BAAQMD Thresholds	**10 (54)**	**10 (54)**	**----**	**15 (82)**	**10 (54)**
Significant	*No*	*Yes*	----	*No*	*No*

Under the light industrial development option (Option 1), the primary emissions would be from traffic (employees and vendor delivery trips) associated with daily operations. As shown in Table 3.2-5, the average emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust associated with the light industrial development option would not result in ROG, NOx, $PM_{2.5}$, and PM_{10} emissions above the established thresholds. **(Less Than Significant Impact)**

Under the data center/light industrial development option (Option 2), project emissions would be generated by traffic trips associated with the site, operation of the emergency generators, diesel fuel storage, and operation of the cooling towers. Diesel fuel for each of the emergency generators would be stored in aboveground belly tanks in the generator housing units. Diesel fuel has a very low volatility and emissions of ROG from fuel storage are expected to be negligible. No other emissions would be generated by the storage of fuel on-site.

In cooling tower operations, there is a loss of liquid water via small droplets that enter the air. These droplets can carry chemicals and minerals into the environment. For the proposed project, the water droplets would contain total dissolved solids (TDS). While gas emissions would not occur, PM emissions would result. Based on the operational perimeters of the proposed cooling towers, PM_{10} and $PM_{2.5}$ emissions would be minimal.

Under the data center/light industrial development option, there would be fewer employees on-site than under the light industrial development option. In addition, there would be fewer delivery trucks due to the reduced light industrial operations. As such, the mobile and area emissions would be substantially less under this option and minimal relative to BAAQMD thresholds.

The primary emissions associated with the data center/light industrial development option would be from the operational testing of the emergency generators. During normal operations, the generators would only run during periodic testing and maintenance. Operation of the generators is limited to 50 hours per engine per year of non-emergency use by the state's Air Toxic Control Measure for Stationary Compression Ignition Engines. For each generator, standard testing would occur for one hour per month for 11 months each year and load testing for up to four hours per year, for a total of 15 hours per year per generator. As proposed, however, the project would only test the generators for one-half hour each month at idle or low load and then for four hours once per year at full load.

The proposed data center/light industrial development option would not result in ROG, $PM_{2.5}$, and PM_{10} emissions above the established thresholds. As shown in Table 3.2-5, without any limitations on generator operations for testing and maintenance emissions associated with the data center/light industrial project would have a significant NOx impact to sensitive receptors. The emergency generator for the proposed 7 MGD sanitary pump station is anticipated to be 50 kW and would result in a small incremental addition to daily operational emissions associated with the proposed project.

Impact AQ-1: The proposed project would result in a significant impact related to the production of NOx during generator testing. **(Significant Impact)**

Toxic Air Contaminants

With the data center/light industrial development option, the project generators would emit diesel particulate matter (DPM), which is considered a toxic air contaminant (TAC). The potential health risk to nearby sensitive receptors from testing and maintenance of the on-site generators was evaluated based on a 30-year exposure. The nearest receptors are the residences along Murphy Ranch Road in Milpitas, approximately 1,650 feet south of the project site (as shown in the following figure).

Figure 3.2-2: TAC Sensitive Receptor Locations

The nearest sensitive receptors and the location of maximum TAC impact from operation of the proposed project are shown on Figure 3.2-2.

The analysis assumed the emergency generators would operate for a maximum of 50 hours per year per generator at full load (the maximum allowed by the State of California for such a use). The proposed project is required to limit emergency testing of the generators, further reducing potential impacts of operational emissions, as previously described. The results of the analysis are shown in Table 3.2-6.

Table 3.2-6: Maximum TAC Community Risk			
Receptor	**Cancer Risk (per million)**	**Maximum Annual $PM_{2.5}$ (µg/m^3)**	**Maximum Hazard Index**
Off-Site Residences	1.6	<0.01	<0.01
BAAQMD Single Source Threshold	*10.0*	*0.3*	*1.0*
Significant Impact	No	No	No

As shown in Table 3.2-6, the health risk to the nearest sensitive receptors would be well below the BAAQMD thresholds. The adjacent LECEF is an industrial use and is not considered to be a sensitive receptor. **(Less Than Significant Impact)**

3.2.2.4 *Construction Impacts*

Emissions from construction-related automobiles, trucks, and heavy equipment are a primary concern due to release of diesel particulate matter (an air toxic contaminant[8] due to its potential to cause cancer), TACs from all vehicles, and $PM_{2.5}$, which is a regulated air pollutant.

Construction emissions can vary depending on the year in which construction is anticipated to occur, as a result of improved technologies over time resulting in lower emitting equipment and vehicles. Construction emissions were considered for both project options because of the difference in timing and scope in the projects. For the light industrial development option, the analysis assumed construction of the entire project, including infrastructure, in one phase with construction beginning in January 2018 and finishing in September 2019. For the data center/light industrial development option, the analysis assumed two phases of construction with the data center being constructed in the near term and the light industrial being constructed at a later date.

Based on construction phasing, construction emissions for the data center/light industrial development option (approximately 10 years between the completion of the data center and the construction of light industrial uses on the southern portion of the site) would be less than for the light industrial development option (approximately 20-months of construction), as that project would be built over an extended number of years which reduce the full impacts of construction on the entire site. Therefore, the following analysis is based on the light industrial development option which represents the worst-case for construction emissions.

Table 3.2-7 shows an estimate of daily air emissions from construction of the proposed project based upon a detailed air analysis using CalEEMod.

Table 3.2-7: Average Daily Construction Emissions from the Project

Description	ROG	NOx	PM_{10}	$PM_{2.5}$
Total Construction Emissions (tons) 2018	0.65	6.58	0.13	0.12
Total Construction Emissions (tons) 2019	6.59	0.66	0.02	0.02
Average Daily Emissions (pounds per day)	36	36	1.0	1.0
BAAQMD Thresholds (pounds per day)	***54***	***54***	***82***	***54***

Construction of the project would involve demolition of the existing buildings on-site, site grading, trenching for utilities (on- and off-site), paving, building construction, and architectural coating. As shown in Table 3.2-7, the emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust associated with construction of the project would not exceed the BAAQMD significance thresholds and, therefore, would not result in a significant impact from construction emissions.

Construction activities on-site would, however, generate dust and other particulate matter that could temporarily impact nearby sensitive receptors. The amount of dust generated would be highly variable and is dependent on the size of the area disturbed at any given time, the amount of activity, soil conditions, and meteorological conditions. The nearest land uses are commercial and office, and

[8] A toxic air contaminant is a pollutant that is known or suspected to cause cancer or other serious health effects.

are not considered sensitive receptors. The project would be required to implement BAAQMD dust control measures as a condition of project approval, as outlined below. The following permit conditions are included in the project to further reduce construction-related air quality impacts.

Permit Conditions:

All construction phases of the proposed project shall implement the following Best Management Practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible and feasible. Building pads shall be laid as soon as possible and feasible, as well, after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

With implementation of the above described measures, project construction for either development option would not generate significant levels of dust that would affect local and regional air quality. **(Less Than Significant Impact)**

3.2.2.5 *Odors*

The project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. Odors would, however, be temporary and localized and are not likely to affect people off-site. **(Less Than Significant Impact)**

3.2.3 Mitigation and Avoidance Measures for Air Quality Impacts

3.2.3.1 *NOx Impacts*

To ensure that the proposed emergency generator testing/maintenance plan is implemented to reduce NOx, the following mitigation measures are included in the project:

MM AQ-1.1: Prior to issuance of a building permit, the project applicant shall submit a generator operations plan to the Building Division staff and ensure that generator operations for or maintenance and testing purposes shall be limited so that the combined operation of all 24 engines does not exceed 360 hours in any consecutive 12-month period and the average load factor does not exceed 30 percent during testing.

MM AQ-1.2: The operator of the data center shall retain records as required by the Bay Area Air Quality Management District (BAAQMD) as a condition of the Permit to Operate that includes: 1) date and times of all reliability-related testing, and 2) engine load during the testing.

MM AQ-1.3: Prior to issuance of any building permit, the project applicant shall submit the records noted above in MM AQ-1.2 as part of the operator's Permit to Operate conditions, to BAAQMD for approval.

MM AQ-1.4: Prior to approval of any project-specific light industrial development on the project site (e.g., plan development permit or equivalent), excluding the data center use, the Project applicant shall submit a Transportation Demand Management (TDM) Plan to the satisfaction of the Transportation Manager of the Department of Public Works and the PBCE Supervising Environmental Planner.

The TDM Plan shall contain the following components or equivalent measures to result in a 10% reduction in weekday mobile emissions:

- Eco Pass, Clipper Card, or equivalent for all employees, providing free rides on Santa Clara County's local transit agency, the Santa Clara Valley Transportation Authority (VTA) 25% Transit Subsidy for transit agencies other than the VTA, including Caltrain, ACE, Capitol Corridor, and BART;

- Free "Last Mile" Shuttles to local train systems (e.g. Caltrain, Amtrak, ACE) and VTA Light Rail Transit;

- Internal Carpool Matching Program utilizing zip code matching;

- Personalized Commute Assistance offered by an on-site Commute Coordinator;

- Preferred parking for Carpools and Vanpools located near entrances to every building;
- Bicycle Lockers and/or Bicycle Racks near entrances to every building;
- Showers for cyclists and pedestrians, offering clean towel service, complimentary toiletries, hair dryers, and ironing boards; and
- Support Citywide Car Share programs.

Based on CalEEMod modeling, implementation of the above mitigation measures would reduce NOx emissions from Option 1 from 9.8 tons per year (53.6 pounds per day) to 9.2 tons per year (50.5 pounds per day). Emissions from Option 2 would be reduced from 20.0 tons per year (122.7 pounds per day) to 9.3 tons per year (51.1 pounds per day). Emissions of NOx would be reduced below the threshold for NOx of 10 tons per year or 54 pounds per average day. **(Less than Significant with Mitigation)**

3.2.4 Conclusion

With implementation of the identified permit conditions, limits on generator testing, and Transportation Demand Measures (TDMs) the proposed project would have less than significant operational and construction air quality impacts. **(Less Than Significant Impact with Mitigation)**

3.3 BIOLOGICAL RESOURCES

The following evaluation of biological resources on-site and within areas to be temporarily affected by utility installation is based primarily upon a biologic report prepared by *Live Oak Associates* in March 2017. Field surveys, including a protocol-level burrowing owl survey, were conducted in June and October 2016, as stated in the biologic report. An evaluation of the impacts of the potential stormwater outfall to Coyote Creek was evaluated by *H.T. Harvey & Associates, Ecological Consultants*. A tree survey was completed by *HMH Engineers*, in October 2015. These reports are provided in Appendices C, D, and E, respectively.

3.3.1 <u>Environmental Setting</u>

3.3.1.1 *Regulatory Framework*

Threatened and Endangered Species

State and federal endangered species legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal Endangered Species Acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status."

Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the take of a listed species. To "take" a listed species, as defined by the State of California, is "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" said species (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" of a listed species (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

<u>Migratory Birds</u>

State and federal laws also protect most bird species. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

<u>Birds of Prey</u>

Birds of prey are protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

Additionally, the Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits anyone from taking bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present such that it agitates or bothers an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Bats

Section 2000 and 4150 of the California Fish and Game Code states that it is unlawful to take or possess a number of species, including bats, without a license or permit, as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as “an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering.” For these reasons, bat colonies in particular are considered to be sensitive and therefore, disturbances that cause harm to bat colonies are unlawful.

Wetlands and Other “Jurisdictional Waters”

Natural drainage channels and adjacent wetlands may be considered “Waters of the United States” (hereafter referred to as “jurisdictional waters”) subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the 1972 Clean Water Act. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition; and
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

The USACE regulates the filling or grading of jurisdictional waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high water marks” on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual.

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards, under the Porter-Cologne Water Quality Control Act. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction, is regulated by the RWQCB. Installation of rock slope protection and trenching to install the potential stormwater outfall and the elimination of a small wetland in the southwest corner of the site would require a permit from the USACE and the RWQCB.

CDFW has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question. Installation of rock slope protection and trenching to install the potential stormwater outfall would require a permit from CDFW.

Santa Clara Valley Habitat Plan

Six local partners (i.e., County of Santa Clara, Santa Clara Valley Transportation Authority; Santa Clara Valley Water District; and the Cities of San José, Gilroy, and Morgan Hill) and two wildlife agencies (CDFW and USFWS) prepared and adopted a multi-species Santa Clara Valley Habitat Conservation Plan (SCVHP), which primarily covers southern Santa Clara County, as well as the City of San José with the exception of the bayland areas.

The SCVHP addresses listed species and species that are likely to become listed during the plan's 50-year permit term. The covered species include nine plants and nine animals. The animal species covered include, but are not limited to, the California tiger salamander, California red-legged frog, western pond turtle, and western burrowing owl.

The SCVHP requires that the agencies comment on reportable interim projects and recommend mitigation measures or project alternatives that would help achieve the preliminary conservation objectives and not preclude important conservation planning options or connectivity between areas of high habitat value. Funding sources for the SCVHP include development fees based on land cover types (natural, agricultural or small vacant sites surrounded by urban development). Additional fees are charged based on the occurrence of certain sensitive habitat types such as serpentine and wetlands.

The project is considered a covered project under the SCVHP. As a result, the project would be subject to conditions and fees of the SCVHP, which will be calculated at the time the project submits an application, which corresponds to application timing of grading and/or building permits. The on-site portion of the development area is within Fee Zone B: Mostly Cultivated Agricultural Lands and the majority of the off-site utility alignments are within Fee Zone A: Ranchlands and Natural Lands. The potential stormwater outfall to Coyote Creek would also be located within Zone A. In addition, a Nitrogen Deposition Fee and temporary impact fees are expected to be assessed for the proposed project.

The SCVHP also includes conditions, as shown in Table 3 of the Technical Biological Report (Appendix C). These conditions are included in the mitigation measures described in Section 3.3.3 Mitigation and Avoidance Measures.

Envision San José 2040 General Plan

The Envision San José 2040 General Plan (General Plan) aims to protect biological resources when properties are developed in San José. Generally, similar types of requirements occur in the General Plan as in the SCVHP. The General Plan includes several policies relevant to biological protections including, but are not limited to, the following:

Policy MS-21.4: Encourage the maintenance of mature trees, especially natives, on public and private property as an integral part of the community forest. Prior to allowing the removal of any mature tree, pursue all reasonable measures to preserve it.

Policy MS-21.5: As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Avoid any adverse effect on the health and longevity of protected or other significant trees through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks and native sycamores. When tree preservation is not feasible, include appropriate tree replacement, both in number and spread of canopy.

Policy MS-21.6: As a condition of new development, require, where appropriate, the planting and maintenance of both street trees and trees on private property to achieve a level of tree coverage in compliance with and that implements City laws, policies or guidelines.

Policy MS-21.9: Where urban development occurs adjacent to natural plant communities (e.g., oak woodland, riparian forest), landscape plantings shall incorporate tree species native to the area and propagated from local sources (generally from within 5-10 miles and preferably from within the same watershed).

Policy ER-1.4: Minimize the removal of ecologically valuable vegetation such as serpentine and non-serpentine grassland, oak woodland, chaparral, and coastal scrub during development and grading for projects within the City.

Policy ER-1.5: Preserve and protect oak woodlands, and individual oak trees. Any loss of oak woodland and/or native oak trees must be fully mitigated.

Policy ER-1.7: Prohibit planting of invasive non-native plant species in oak woodlands, grasslands, chaparral and coastal scrub habitats, and in hillside areas.

Policy ER-4.1: Preserve and restore, to the greatest extent feasible, habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.

Policy ER-4.2: Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.

Policy ER-4.3: Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.

Policy ER-4.4: Require that development projects incorporate mitigation measures to avoid and minimize impacts to individuals of special-status species.

Policy ER-5.2: Require that development projects incorporate measures to avoid impacts to nesting migratory birds.

Policy ER-6.3: Employ low-glare lighting in areas developed adjacent to natural areas, including riparian woodlands. Any high-intensity lighting used near natural areas will be placed as close to the ground as possible and directed downward or away from natural areas.

Policy ER-6.6: Encourage the use of native plants in the landscaping of developed areas adjacent to natural lands.

Policy ER-6.8: Design and construct development to avoid changes in drainage patterns across adjacent natural areas and for adjacent native trees, such as oaks.

Policy ER-6.10: Update the Riparian Corridor Policy Study and all City design guidelines based on guidance from Responsible Agencies on best practices for lighting to protect sensitive habitats and species, including birds and bats.

The General Plan also includes the following policies related to bird-safe design:

Policy ER-7.1: In the area north of Highway 237, design and construct buildings and structures using bird-friendly design and practices to reduce the potential for bird strikes for species associated with the baylands or riparian habitats of lower Coyote Creek.

Policy ER-7.6: Update the Riparian Corridor Policy Study and City of San José design guidelines based on guidance from Responsible Agencies and other interested organizations on best practices for avoiding and minimizing bird strikes at new tall buildings.

Alviso Master Plan

The Vegetation and Wildlife section of the Alviso Master Plan identifies existing habitats in the Plan area, of which the project site is a part. These habitats include seasonal wetlands, agricultural fields, and riparian areas along and aquatic conditions within Coyote Creek. Special status animal species, including burrowing owls, are acknowledged to be within the Plan area and could be affected by future development.

Policies within the Plan, pertinent to the proposed project and the potential stormwater outfall to Coyote Creek, include those that respect and complement the natural setting, marshlands, waterways, trails, and other amenities of Alviso, as described below:

Environmental Protection Policy 1: All new parking, circulation, loading, outdoor storage, utility, and other similar activity areas must be located on paved surfaces with proper drainage to avoid potential pollutants from entering the groundwater, Guadalupe River, Coyote Creek, or San Francisco Bay.

Environmental Protection Policy 3: The riparian corridors adjacent to Coyote Creek and Guadalupe River should be preserved intact. Any development adjacent to the waterways should follow the City's Riparian Corridor policies.

Environmental Protection Policy 4: To mitigate the loss of specific wildlife habitat due to development, certain lands should be set aside to provide needed habitat.

City of San José Riparian Corridor Policy and Bird-Safe Design

The City of San José has a riparian buffer policy that is administered through the Riparian Corridor Policy Study. The Riparian Corridor Study defines a riparian corridor as any defined stream channel, including the area up to the bank full-flow line, as well as all riparian vegetation in contiguous adjacent uplands. The policy states that riparian setbacks should be measured 100 feet from the outside edges of riparian habitat or the top of bank, whichever is greater. However, the policy also states that setback distances for individual sites may vary if consultation with the City and a qualified biologist indicates that a smaller or larger setback is more appropriate for consistency with riparian preservation objectives.

The riparian corridor of Coyote Creek is located approximately 100 feet from the eastern boundary of the project site. A stormwater outfall may be located within the riparian corridor of Coyote Creek. The construction of the outfall is dependent upon proximity to the creek and cannot be designed to avoid the riparian corridor setback.

Council Policy 6-34 became effective on August 23, 2016. The purpose of the policy is to provide guidance consistent with the goals, policies, and actions of the City's General Plan for 1) protecting, preserving, or restoring riparian habitat; 2) limiting the creation of new impervious surface within Riparian Corridor setbacks to minimize flooding from urban run-off, and control erosion; and 3) encouraging bird-safe design in baylands and riparian habitats of lower Coyote Creek, north of State Route 237.

This policy supplements the regulations for riparian corridor protection already contained within the Habitat Plan, Municipal Code, and other existing City policies that may provide for riparian protection and bird-safe design.

Specific guidance pertaining to setbacks, allowed activities, and materials and lighting in riparian areas are included within Council Policy 6-34. Further, bird-safe design guidelines for structures north of SR 237 advise that buildings:

- Avoid use of mirrors and large areas of reflective glass;
- Avoid use of transparent glass skyways, walkways, or entryways, free-standing glass walls, and transparent building corners;
- Avoid funneling open space to a building façade;

- Strategically place landscaping to reduce reflection and views of foliage inside or through glass;
- Avoid or minimize up-lighting and spotlights; and
- Turn non-emergency lighting off, or shield it, at night to minimize light from buildings that is visible to birds, especially during bird migration season (February through May and August through November).

Ordinance-Size Trees

The City of San José has a Tree Ordinance (Chapter 13.32 of the Municipal Code), which regulates the removal of trees. The City's Tree Ordinance seeks to:

> Promote the health, safety, and welfare of the city by controlling the removal of trees in the city, as trees enhance the scenic beauty of the city, significantly reduce the erosion of topsoil, contribute to increased storm water quality, reduce flood hazards and risks of landslides, increase property values, reduce the cost of construction and maintenance of draining systems through the reduction of flow and the need to divert surface waters, contribute to energy efficiency and the reduction of urban temperatures, serve as windbreaks and are prime oxygen producers and air purification systems.

An "ordinance-size tree" is defined as any native or non-native tree with a circumference of 56 inches (diameter of 18 inches) at 24 inches above the natural grade of slope. For multi-trunk trees, the circumference is measured as the sum of the circumferences of all trunks at 24 inches above the natural grade of slope. The ordinance covers both native and non-native species. A tree removal permit is required from the City prior to the removal of any trees covered under the ordinance. Prior to the issuance of a removal permit, the City requires that a formal tree survey be conducted which indicates the number, species, trunk circumference and location of all trees which will be removed or impacted by the project.

3.3.1.2 *Existing Conditions*

Four general biotic habitat distinctions – agricultural fields (short-term fallowed), annual grassland, developed, and Coyote Creek riparian corridor describe the habitat areas identified within the project area (Figure 3.3-1). The main portion of the site (a total of approximately 60 acres) is comprised of agricultural fields with two developed residential farm supporting areas and a small wetland. The utility alignments (a total of approximately 46.8 acres) are comprised of annual grassland with some developed roads. The potential storm drain outfall would be within the Coyote Creek riparian corridor with a small portion of developed levee road. This riparian habitat is broken up into two habitat types; riparian woodland and riparian floodplain. All habitat areas of the project area are described below.

Source: Live Oak Associate, Inc., 3/7/2017.

BIOTIC HABITATS FIGURE 3.3-1

Agricultural Fields

The core project area (approximately 64.5 acres of land located west of Coyote Creek and to the east and north of the LECEF natural gas plant and the PG&E station), is predominantly comprised of managed agricultural fields that are regularly disked and are currently fallowed. These areas of the project site appear to have been annually disked and/or farmed for more than 20 years according to historical photography available from Google Earth (accessed June 20, 2016). At the time of the surveys, these fields were mostly comprised of barren exposed soils with scattered ruderal annual grassland species. Vegetation of the agricultural fields were dominated by typical grassland species such as wild oat and Italian rye grass and forb species included cheeseweed mallow, black mustard, and summer mustard.

Other species observed in this habitat of the project area included Harding grass, poison hemlock, field bindweed, bristly ox tongue, prickly lettuce, wild radish, and milk thistle. Along the northern margin of the site, which was less managed, a few woody plants occurred including coyote brush, box elder, Northern California black walnut, and blue elderberry. A linear low depression exists along the western edge of the site, however, with the exception of a couple individuals of wetland species like curly dock, this feature is dominated by upland species like cheeseweed and wild radish. Grasses dominating this feature appear to be undifferentiated from the adjacent field to the east and it has no real defined bed/bank.

Animals observed within this habitat during the site visits include the double-crested cormorant, gull, Canada goose, mallard duck, red-tailed hawk, red-shouldered hawk, barn owl, killdeer, great egret, American crow, western scrub jay, northern mockingbird, black phoebe, mourning dove, rock dove, California towhee, yellow-rumped warbler, western meadowlark, song sparrow, house finch, mouse, Botta's pocket gopher, California ground squirrel, and black-tailed jackrabbit.

Annual Grassland

Annual grassland areas were observed along much of the off-site infrastructure alignment areas of the proposed project (i.e., roadways, potential outfall alignment into Coyote Creek, and potable water, recycled water, fiber optic, sewer, and gas lines). Annual grasslands range from managed fields to a more mesic and intact grasslands and total approximately 32.6 off-site acres. The remaining acres are developed habitat. A filled creek exits running north-south where the utility alignment is planned; this no longer functions as a creek and does not support a bed or bank.

Man-made raised earthen berms exist within the annual grassland, which provide habitat for California ground squirrels, which have colonized many of the berms. One long thin berm exists in the field east of Zanker Road and north of the existing bike path. This berm had several black corrugated pipes installed within the berm. These may have been installed to promote habitat suitability of the property for burrowing owls. Artificial burrows installed to promote burrowing owl use are located within mounds adjacent to the western edge of the infrastructure alignments. Burrowing owls were not observed during the site surveys.

Plants observed in this habitat and along the edges of this habitat include ruderal plants generally found in annual grasslands such as wild oats, black mustard, ripgut, soft chess, Italian thistle, barnyard barley, prickly lettuce, common mallow, wild radish, Russian-thistle, prickly sow-thistle, and common chickweed. Borders of this habitat included landscaped trees and other landscaping.

Animals observed during the site visit in addition to species observed in the agricultural fields include white pelican, turkey vulture, American kestrel, European starling, and vole. Coyote scat was also observed.

Developed

There are developed lands both on the main project site and off-site in the utility alignment areas. Approximately four acres of developed area exists on-site and include:

- A landscaped margin along the western side of the agricultural fields which is shared with the PG&E and LECEF properties (the margin to the west of project site);
- A residential unit in the southeast corner of the site;
- Two additional residential units, a warehouse storage building likely associated with the agricultural uses of the agriculture fields near the center of the site; and
- A large gravel driveway that provides access from the two additional residential units to Ranch Drive.

The residential properties of the site support a mix of horticultural plant species and weedy species. Plants observed in the developed areas include landscape plantings of jacaranda, oleander, privet, pepper trees, and a row of various managed fruit trees and olives. Weedy species around the residential properties include many of the same species observed in the agricultural fields of the site. Animals in the adjacent habitats would be expected to occur in this habitat.

Within the infrastructure alignment areas off-site, approximately 15 acres of developed land use areas include public and private roadways and a bike path on Alviso-Milpitas Road that parallels Highway 237. The potential outfall structure on Coyote Creek would cross an off-site levee, a levee road, and another road on the creek side of the toe of the levee. Both roads are graded gravel roadways. No plants were observed in any of the on- or off-site roadways.

The landscaped margin of the site, which lies along the border of the site, supports pepper and sycamore trees, privet, and crimson bottlebrush to name a few of the plantings. Some of these species overhang the property and some are likely off-site on the utility properties.

Wetlands

A small wetland (approximately 0.066 square feet) exists in the shape of a narrow triangular area near Ranch Drive in the southwestern corner of the main site. It is dominated by a dense stand of California blackberry and there is a pump station next to it. Animals in the adjacent habitats would be expected to occur in this habitat.

Off-Site Riparian Corridor: Coyote Creek Riparian Woodland and Floodplain

Coyote Creek is separated from the project site by a levee topped with a gravel levee road. The riparian habitat of Coyote Creek is comprised of two habitat types; a riparian woodland and a mesic grassland floodplain that appears to be managed for fire fuel abatement. The total acreage of the grassland, mixed riparian forest, seasonal wetland, and urban habitat is approximately 0.43 acres in the area of the potential stormwater outfall.

The riparian woodland of Coyote Creek that runs along the project site's eastern boundary contains mature riparian tree species that provide a dominant habitat canopy. Tree species in the riparian woodland include box elder, California buckeye, cottonwood, valley oak, coast live oak, willows, and black elderberry. Shrubs, forbs, and grasses in the understory of the riparian tree canopy included mugwort, giant reed grass, mulefat, coyote brush, poison hemlock, teasel, broad-leaved peppergrass, California blackberry, curly dock and cattail, to name a few of the observed species.

A grassland floodplain occurs adjacent to the riparian woodland that was dominated by mesic species during the June 2016 site visit. During the October 2016 site visit, this portion of the riparian corridor had been mowed, likely for fire fuel abatement. In general, this area supports grassland species with several mesic and riparian species. Species observed in this habitat area include wild oats, mugwort, broad-leaved peppergrass, curly dock, poison hemlock, teasel, Bermuda grass, stinkwort, perennial wildrye, serrated lettuce, bur clover, and wild radish.

A variety of animal species may use this habitat for both migratory and non-migratory purposes, including those species within the adjacent habitat.

Movement Corridors

Ecologists and conservation biologists have expended a great deal of energy since the early 1980's advocating the protection and restoration of landscape linkages among suitable habitat patches. Movement corridors or landscape linkages are usually linear habitats that connect two or more habitat patches, providing assumed benefits to the species by reducing inbreeding depression, and increasing the potential for recolonization of habitat patches. Some researchers have even demonstrated that poor quality corridors can still provide some benefit to the species that use them. Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines.

Healthy riparian areas (supporting structural diversity, i.e., understory species to saplings to mature riparian trees) have a high biological value as they not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

Although the project site and Coyote Creek are not within a defined linkage in the Santa Clara Valley Habitat Conservation Plan, Coyote Creek is defined as an important regional habitat linkage. Coyote Creek is expected to act as a movement corridor for many common local species.

Special Status Plant and Animal Species

Several species of plants and animals within the State of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described above in Section 3.4.1.1, state and federal laws have provided the CDFW and the USFWS with a mechanism for conserving and protecting the diversity of plant and animal species native to the state.

A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2001). Collectively, these plants and animals are referred to as "special status species."

A number of special status plants and animals occur in the vicinity of the project area. These species, and their potential to occur in the study area, are listed in Table 1 of Appendix C. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1990), *California Natural Diversity Data Base* (CDFW 2016), *Endangered and Threatened Wildlife and Plants* (USFWS 2016), and the *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFW 2016).

A search of published accounts for all of the relevant special status plant and animal species was conducted for the Milpitas USGS 7.5 minute quadrangle in which the project site occurs, and for the eight surrounding quadrangles (Newark, Niles, La Costa Valley, Mountain View, Calaveras Reservoir, Cupertino, San José West, and San José East) using the California Natural Diversity Data Base Rarefind5 2016 (CNDDB). All species listed as occurring in these quadrangles on CNPS Lists 1A, 1B, 2, or 4 were also reviewed.

Serpentine soils are absent from the site; therefore, those species that are uniquely adapted to serpentine conditions are considered absent from the site. Other plant species occur in habitats not present in the study area (e.g., chaparral, broadleafed forest, coastal prairie, coastal scrub, etc.) or at elevations significantly above on-site elevation. Therefore, they are also considered absent from the site.

Thirteen special status animal species from Table 1 in Appendix C potentially occur more frequently as potential foragers, transients, may be resident to the site, or they may occur within areas adjacent to the site. These include steelhead, western snowy plover, American peregrine falcon, northern harrier, white-tailed kite, western burrowing owl, saltmarsh common yellowthroat, tricolored blackbird, Alameda song sparrow, California yellow warbler, Townsend's big-eared bat, San Francisco dusky-footed woodrat, and ringtail. Several of these species may also roost or nest in trees or shrubs occurring within or adjacent to the site.

The western snowy plover, American peregrine falcon, northern harrier, white-tailed kite, western burrowing owl, saltmarsh common yellowthroat, tricolored blackbird, and Alameda song sparrow, and California yellow warbler may nest on-site or adjacent to the site, and the American peregrine falcon would be expected to forage on and over the site.

No evidence of bats was observed during reconnaissance surveys, and it is highly unlikely that the site supports roosting habitat for bats; however, individual Townsend's big-eared bats may forage within the site from time to time.

While not observed, the San Francisco dusky-footed woodrat, and salt marsh harvest mouse and shrew are considered to be species that could occur within the Coyote Creek riparian corridor. The majority of the project site does not represent unique habitat for either species, but both could utilize the riparian habitat for foraging habitat and/or nesting/denning habitat.

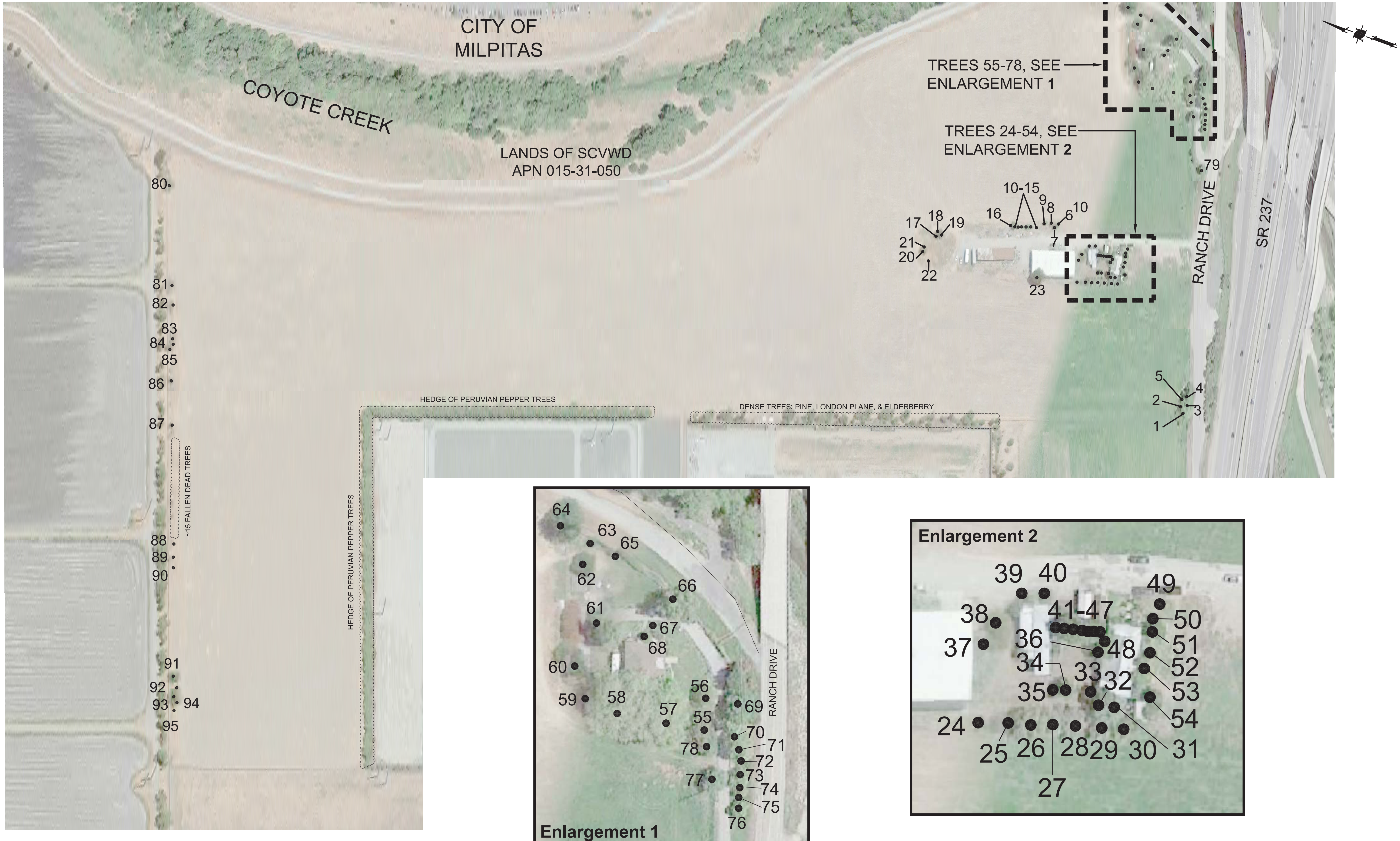
Jurisdictional Waters

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the USACE, CDFW, and the RWQCB. Coyote Creek is considered to be a jurisdictional water. In addition, a small wetland that occurs in the southwestern portion of the main project site may be claimed by the USACE and/or RWQCB.

Trees

There are no trees located within the off-site utility alignment areas, as described in the HMH Engineers tree survey of the utility alignment areas (Appendix E). Approximately 95 trees are located on the main project site, primarily adjacent to the existing residences on-site (as shown in Figure 3.3-2). Approximately 16 of the total trees are located along the northern boundary of the site where the data center would be constructed.

There are approximately 24 ordinance-size trees located on site. Seven of these ordinance-size trees are located along the northern boundary of the site, as shown on Figure 3.3-2 and include three Fremont's Cottonwood, three California Box Elder, and one California Walnut. The remainder of the ordinance-size trees are located in the southern portion of the site adjacent to the existing residences. These trees include Blue Elderberry (3), London Plane (4), California Bay Laurel (1), Cherry (1), California Walnut (1), Glossy Privet (2), Coast Redwood (1), Crepe Myrtle (1), European Olive (2), and Shamel Ash (1).



Source: HMH Engineers., Oct. 6, 2015.

TREE MAP

FIGURE 3.3-2

3.3.2 Biological Resources Impacts

3.3.2.1 *Thresholds of Significance*

For the purposes of this EIR, a biological resource impact is considered significant if the project would:

- 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 (CDFW) or United States Fish and Wildlife Service (USFWS);
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal filling, hydrological interruption, or other means?
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.3.2.2 *Consistency with Plans*

Threatened and Endangered Species

Impacts to migratory birds, birds of prey, and bat species are prohibited under state and federal laws, including the Federal Migratory Bird Treaty Act and State Fish and Game Code. Mitigation measures are included in the project, as described in Section 3.3.3, below to reduce impacts to a less than significant level. Therefore, the project is consistent with plans and policies related to the protection of state and federally threatened and endangered species.

Wetlands and Other Jurisdictional Waters

All activities that involve the filling of jurisdictional waters are subject to the permit requirements of the USACE and RWQCB. The project will be required to acquire permits from these agencies should the wetlands be filled as a part of the construction of the project.

CDFW has jurisdiction over the bed and banks of Coyote Creek up to the inboard top of levee. A Streambed Alteration Permit will be required for impacts associated with the potential stormwater outfall to the creek. Mitigation measures included in the USACE, RWQCB, and CDFW permits and as described below in Section 3.3.3 will be included in the project to reduce impacts to a less than significant level consistent with the plans and policies of these agencies, as well as the SCVHP.

Santa Clara Valley Habitat Plan

The project is considered a covered project under the SCVHP. As a result, the project would be subject to conditions and fees of the SCVHP. Portions of the site are within both Zone A and Zone B Fee Areas. In addition, conditions for covered activities under the SCVHP would be implemented to meet the requirements of the Habitat Plan as well as reduce impacts to biological resources to a less than significant level as described in Section 3.3.3.

Envision San José 2040 General Plan

As previously described in, the Envision San José 2040 General Plan (General Plan) aims to protect biological resources when properties are developed in San José. Projects must be consistent with all measures (Goals) of the General Plan. Implementation of the mitigation measures will be required by the City of San José such that the project is consistent with the General Plan. Final building materials for the proposed structures would be determined based upon their ability to reduce the potential for bird strikes for species associated with the riparian habitats of lower Coyote Creek, consistent with the General Plan.

Riparian Corridor Policy and Bird-Safe Design

The potential stormwater outfall to Coyote Creek is consistent with the Riparian Corridor Policy because buildings, impervious surfaces, and ornamental landscaping are not proposed and it meets the utility exemption to the policy. The proposed industrial project is consistent with the Riparian Corridor Policy because it is located outside of the 100-foot setback. Loading docks and lighting will be oriented away from the creek area to the extent possible. Landscaping and other screening features will be utilized to minimize impacts to the riparian corridor. Outdoor storage, if necessary, will be restricted to areas away from the creek.

The proposed project has been designed to limit the use of transparent or reflective glass to covered front entrances and cafeteria areas. Secondary facades over the window areas serving office areas will be included in the project. Buildings would not be placed in a funneling configuration and up-lighting or spotlights are not planned for the project. Lighting on-site will be minimized to that required for security, safe operation, and maintenance of the facility. For these reasons, and the reasons above, the project is in conformance with Council Policy 6-34 and General Plan policies ER 6-3, 6.10, 7.1, and 7.6.

Ordinance Size Trees

The City of San José's Tree Ordinance regulates the removal of trees. A tree removal permit is required from the City prior to the removal of any trees covered under the ordinance. Approximately 24 ordinance size trees would be removed by the project. Replacement trees would be planted as described in the permit conditions, below, consistent with the Municipal Code.

3.3.2.3 *Loss of Habitat for Special Status Plants and Animal Species*

Of the 20 special status plant species that occur regionally within habitats that are broadly similar to those of the project site, all are considered absent and/or unlikely to occur on- or off-site. This is because they are not known to occur near the site or they occur within habitats that are subtly and importantly different from those of the site. **(Less than Significant Impact)**

Twenty-nine (29) special status animal species occur, or once occurred, regionally. Of these, sixteen species would be absent or unlikely to occur on the site due to a lack of suitable habitat for these species. The species that would be absent or unlikely to occur include the Bay checkerspot butterfly, vernal pool tadpole shrimp, longfin smelt, California tiger salamander, California red-legged frog, foothill yellow-legged frog, western pond turtle, Alameda whipsnake, California black rail, California clapper rail (Ridgway rail), California least tern, Swainson's hawk, bank swallow, western yellow-billed cuckoo, salt-marsh wandering shrew, and salt marsh harvest mouse.

The thirteen remaining special status animal species from Table 1 in Appendix C potentially occur more frequently as potential foragers, transients, may be resident to the site, or they may occur within areas adjacent to the site. These include steelhead, western snowy plover, American peregrine falcon, northern harrier, white-tailed kite, western burrowing owl, saltmarsh common yellowthroat, tricolored blackbird, Alameda song sparrow, California yellow warbler, Townsend's big-eared bat, and San Francisco dusky-footed woodrat. Several of these species may also roost or nest in trees or shrubs occurring on or adjacent to the site. These species are discussed below:

The western snowy plover, American peregrine falcon, northern harrier, white-tailed kite, western burrowing owl, salt marsh common yellowthroat, tricolored blackbird, and Alameda song sparrow, and California yellow warbler may nest on-site or adjacent to the site, and the American peregrine falcon would be expected to forage on and over the site.

No evidence of bats was observed during reconnaissance surveys and it is highly unlikely that the site supports roosting habitat for bats; however, individual Townsend's big-eared bats may forage in the project area from time to time. Loss of the potential forage habitat for this bat species would be considered a less than significant impact due to the large areas of similar or higher quality bat forage habitat occurring within the vicinity of the project site.

Steelhead and Chinook salmon occur in Coyote Creek in the area of the potential stormwater outfall during migration between marine habitats and upstream spawning habitats. However, no aquatic habitat for special-status fish species occurs in the area of the creek to be affected by potential construction of the stormwater outfall.

The salt marsh harvest mouse and salt marsh wandering shrew are known to occur in salt marsh habitats of the South Bay; however, suitable habitat for these species is not present near Coyote Creek. The San Francisco dusky-footed woodrat is known to occur in the Coyote Creek corridor downstream of the outfall area; however, no woodrat nests were detected during a focused survey in July 2016. For the reasons described above, these species are determined to be absent in the potential outfall area.

3.3.2.4 *Nesting Migratory Bird Including Nesting Raptors and Tri-Colored Blackbirds, and other Protected Birds*

Trees and large shrubs of the site and adjacent Coyote Creek riparian corridor and landscaped areas may support nesting birds and raptors. Buildout of the project during the nesting period for migratory birds (i.e., typically between February 1 to August 31), including initial site grading, soil excavation, and/or tree and vegetation removal, poses a risk of nest abandonment and death of any live eggs or young that may be present within the nest within or near the site. Such an effect would be considered a significant impact.

Impact BIO-1: Construction activities could result in significant impacts to nesting migratory and other protected bird species. **(Significant Impact)**

3.3.2.5 *Impacts to Western Burrowing Owls*

The project site and off-site utility alignment areas are within the burrowing owl fee area for the SCVHP. Burrowing owls are known to occur adjacent to the site and could occur within artificial burrows specifically designed for burrowing owls near the off-site utility alignments to the west of the site.

The site and off-site utility locations currently support California ground squirrel burrows, and provides potential habitat for burrowing owls. Surveys for burrowing owl per the HCP protocol were conducted on the main portion of the site on June 20 and October 18, 2016 and the utility alignments were surveyed on October 18, 2016. Burrowing owls were not observed during the surveys. As the site is within the burrowing owl fee zone, the project is required to conduct pre-construction surveys in accordance with the Condition 15 of the SCVHP. Measures to ensure compliance with this condition are included below.

Should site grading occur during the nesting season for this species (February 1 through August 31), nests and nestlings that may be present would likely be destroyed. Overwintering burrowing owls may also be buried in their roost burrows outside of the nesting season (September 1 through January 31).

Impact BIO-2: Any actions related to site development that result in the mortality of burrowing owls shall constitute a violation of the Federal Migratory Bird Treaty Act and provisions of the California Fish and Game Code. Therefore, the mortality of burrowing owls would be a significant impact under CEQA. **(Significant Impact)**

3.3.2.6 *Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands*

Riparian habitat occurs along Coyote Creek where the potential stormwater outfall would be installed and within the wetland on-site, as shown on Figure 3.3-2. The only impacts to these communities would be the small impact to riparian habitat which would occur where the outfall could occur in the Coyote Creek riparian corridor (approximately 0.16 acres), and a small triangular wetland near Ranch Road in the southwestern corner of the agricultural field (approximately 0.066 acres).

The project complies with the riparian setback requirements of the City of San José and the SCVHP and will not result in significant adverse impacts to riparian habitat. The project would be required to apply for permits from CDFW, USACE, and RWQCB for the potential outfall and from USACE and RWQCB should the small wetland be impacted. Therefore, development of the site would constitute a significant effect on sensitive and protected habitat communities.

Impact BIO-3: The project would cause permanent impacts to riparian vegetation and seasonal wetlands as a result of installation of the potential stormwater outfall at Coyote Creek and project construction in the southwest corner of the site. **(Significant Impact)**

3.3.2.7 *Loss of Habitat for Native Wildlife*

The habitats of the site and off-site utility alignments comprise only a small portion of the regionally available habitat for plant and animal species that are expected to use the habitat. The proposed project would result in the loss of an agricultural field and annual grassland habitat, both of which have been partially disturbed through introduction of non-native plants, historic use of the site, and development and use of a residential areas and roadways.

The Coyote Creek riparian corridor habitat has a high degree of native species in the canopy and thus supports high quality habitat for local species. The loss of a small amount of riparian habitat is not expected to result in a significant effect on local wildlife. Therefore, impacts due to the loss of these habitats for native wildlife resulting from the proposed project are considered less than significant. In addition, the project would be a covered project under the SCVHP. Therefore, the project is subject to paying SCVHP fees, which provide funding into the regional conservation program of the SCVHP that seeks to preserve equal or higher quality habitat within the Habitat Plan Permit Area (generally Santa Clara County). **(Less than Significant Impact)**

3.3.2.8 *Interference with the Movement of Native Wildlife*

Buildout of the site and installation of utilities would not constrain native wildlife movement, as the only corridor is the Coyote Creek riparian corridor at the eastern edge of the project site, and the only impacts to this corridor would be related to a potential outfall into Coyote Creek. Animals currently using Coyote Creek as a corridor are expected to continue to use it at buildout of the project, especially since the existing levee on the west side of the creek would not be affected. The project would therefore, result in a less than significant interference on the movement of native wildlife.

In addition, the project would be a covered project under the SCVHP. Therefore, the project is subject to paying SCVHP fees, which provide funding into the regional conservation program of the SCVHP that seeks to preserve equal or higher quality habitat within the Habitat Plan Permit Area (generally the Santa Clara County). **(Less than Significant Impact)**

3.3.2.9 *Degradation of Water Quality in Seasonal Drainages, Stock Ponds and Downstream Waters*

Eventual site development and construction would require grading that would leave the construction zone barren of vegetation and, therefore, vulnerable to erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, and adjacent wetlands. Furthermore, urban runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. These pollutants may eventually be carried to sensitive wetland habitats used by a diversity of native wildlife species.

The deposition of pollutants and sediments in sensitive riparian and wetland habitats would be considered a potentially significant adverse environmental impact. The project would comply with the City's grading and NPDES requirements, City policies 6-29 and 8-14, and Condition 3 of the SCVHP (as described within Appendix C), which are designed to protect water quality. Therefore, the project buildout would result in a less than significant impact to water quality. **(Less than Significant Impact)**

3.3.2.10 *Impacts to Trees*

A tree survey was completed for the site (Appendix E) and identified 94 trees on the project site, of which 24 are ordinance size. While an updated survey would be required prior to approval of a Development Permit for the project, it is currently anticipated that the project would remove all 94 existing trees from the site. The data center alone would remove approximately 16 trees along the northern boundary of the site.

Consistent with the Envision San José 2040 General Plan, trees removed by the project would be replace in accordance with all applicable laws, policies or guidelines, including:

- City of San José Municipal Code
  - Section 13.28 (Street Trees)
  - Section 13.32 (Tree Protection Controls)
- Envision San José 2040 General Plan Policies MS-21.4, MS-21.5, and MS-21.6

Permit Conditions:

Tree removal as a result of the project will require replacement-to-removal ratios set forth by the City of San José, as shown in the table below. The exact number and species of trees to be determined based on consultation with the City Arborist and with the Director of the Department of PBCE.

Table 3.4-2: Tree Replacement-to-Removal Ratios

Diameter of Tree to be Removed	Native	Non-native	Orchard	Minimum Size of Replacement Trees
≥ 18"	5:1	4:1	3:1	24" box
≥ 12" but < 18"	3:1	2:1	none	24" box
< 12"	1:1	1:1	none	15-gallon container

x:x = tree replacement to tree loss ratio
Note: Trees greater than 18" diameter shall not be removed unless a Tree Removal Permit, or equivalent, has been approved for the removal of such trees.

If it is determined that the site lacks sufficient areas to accommodate all of the replacement plantings, one or more of the following measures will be implemented to the satisfaction of the Director of PBCE, at the development permit stage:

- The size of a 15-gallon replacement tree may be increased to 24-inch box and count as two replacement trees.
- Replacement tree plantings may be accommodated at an alternative site(s). An alternative site may include local parks or schools, or an adjacent property

where such plantings may be utilized for screening purposes. However, any alternatively proposed site will be pursuant to agreement with the Director of the Department of PBCE.

- A donation may be made to Our City Forest or similar organization for in-lieu tree planting in the community. Such donation will be equal to the cost of the required replacement trees, including associated installation costs, for off-site tree planting in the local community. A receipt for any such donation will be provided to the City of San José Planning Project prior to issuance of a development permit.

The General Plan FPEIR concluded that compliance with local laws, policies, or guidelines would reduce impacts to trees to a less than significant level. **(Less than Significant Impact)**

There is a potential that some trees on-site may be retained during project construction. Construction activities on-site could potentially damage tree roots, harming the health of the existing trees.

Impact BIO-4: Construction activities on-site could result in significant impacts to trees that may be retained. **(Significant Impact)**

3.3.3 Mitigation and Avoidance Measures

Migratory Birds and Other Protected Bird Species

To ensure that any active nests will not be disturbed and individual birds would not be harmed by construction activities, the following mitigation measures are included in the project to reduce impacts to a less than significant level. In addition, although unlikely to occur on the main portion of the site itself, the SCVHP identifies the project site and the off-site utility alignments to be within 250 feet of potentially suitable tricolored blackbird nesting habitat, thus requiring pre-construction surveys in accordance with the Condition 17 of the SCVHP.

MM BIO-1.1: If initial site disturbance activities, including tree, shrub, or vegetation removal, are to occur during the breeding season February 1st to August 31st inclusive, a qualified biologist shall conduct pre-construction surveys for nesting migratory birds onsite and within 250 feet (for raptors) of the site, where accessible. The survey shall occur within 14 days of the onset of ground disturbance if disturbances are to commence between February 1st and June 30th and within 30 days prior to the onset of ground disturbance between July 1st and August 31st. If a nesting migratory bird were to be detected, an appropriate construction-free buffer shall be established in consultation with the California Department of Fish and Wildlife (CDFW). The actual size of the buffer, which shall be determined by the project biologist, would depend on species, topography, and type of activity that would occur in the vicinity of the nest. The project buffer would be monitored periodically by the project biologist to ensure compliance. After the nest is completed, as determined by the biologist, the buffer would no longer be required.

MM BIO-1.2: The Santa Clara Valley Habitat Plan (SCVHP) identifies the project site to be within 250 feet of potentially suitable tricolored blackbird nesting habitat occurring along Coyote Creek. The project applicant shall conduct surveys for tricolored blackbirds within 250 feet of this habitat, where visual access is possible, prior to start of construction following protocols in Condition 17 in Chapter 6 of the SCVHP. Such protocols include:

- Prior to any ground disturbance, a qualified biologist shall complete a background assessment to determine if there has been nesting at the site or near the site in the past five years. This includes checking the California Natural Diversity Database (CNDDB), contacting local experts, and looking for evidence of historical nesting (i.e., old nests).

- If nesting in the past five years is not evident, the qualified biologist shall conduct a preconstruction survey in areas identified in the habitat survey as supporting potential tricolored blackbird nesting habitat. Surveys shall be made at the appropriate times of year when nesting use is expected to occur, and shall document the presence or absence of nesting colonies of tricolored blackbird. Surveys shall conclude no more than two calendar days prior to construction, per Condition 17 of Chapter 6 in the SCVHP.

- Should a nesting colony of tricolored blackbirds be located, a 250-foot construction-free buffer shall be established from the edge of all hydric vegetation associated with the nest site and the buffer shall be avoided, and the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) shall be notified immediately.

- If construction occurs in the project area during the nesting season and when the 250-foot buffer is in place around active nesting habitat, a qualified biologist shall conduct periodic monitoring of the site to ensure the 250-foot buffer is enforced. The biologist shall have the authority to increase the buffer size if needed based on tricolored blackbird behavior at the active nesting area.

- If active tricolored blackbird nesting occurs within 250 feet of the project site and off-site utility alignment areas and construction occurs during the active nesting period resulting in the need for a buffer, the qualified biologist shall conduct training for construction personnel in avoidance procedures, buffer zones, and safety protocols to ensure no impacts to the nest.

Western Burrowing Owls

The following mitigation measures will ensure that burrowing owls will not be harmed by construction activities. Completion of the following measures, including the payment of SCVHP fees, will reduce the potential impacts to burrowing owls to a less than significant level.

MM BIO-2.1: To mitigate impacts to occupied burrowing owl habitat, the project applicant shall pay the burrowing owl fee as specified in the SCVHP for each acre of occupied burrowing owl nesting habitat impacted as a result of project buildout. Fees shall also be required from the loss of foraging habitat on the agricultural fields on-site (approximately 60 acres; Zone B fees) and annual grassland off-site (approximately 31.5 acres; Zone A fees).

MM BIO-2.2: The project applicant shall conduct preconstruction surveys to ascertain whether or not burrowing owls occupy burrows on the site and along the utility alignments off-site prior to construction. The preconstruction surveys shall be performed by a qualified biologist and shall consist of a minimum of two surveys, with the first survey no more than 14 days prior to initial construction activities (i.e. vegetation removal, grading, excavation, etc.) and the second survey conducted no more than 2 days prior to initial construction activities. If no burrowing owls or fresh sign of burrowing owls are observed during preconstruction surveys, construction may continue. However, if a burrowing owl is observed during these surveys, occupied burrows shall be identified by the monitoring biologist and a buffer shall be established, as described below:

- If an active nest is found, a qualified biologist shall establish a 250-foot non-disturbance buffer around all nest sites. If the biologist determines that the nest is vacant, the non-disturbance buffer zone may be removed, in accordance with measures described in the SCVHP. The biologist shall supervise hand excavation of the burrow to prevent reoccupation only after receiving approval from the wildlife agencies (CDFW and USFWS) in accordance with Chapter 6, Condition 15 of the SCVHP.

- For permission to encroach within 250 feet of such burrows during the nesting season (February 1st through August 31st), an Avoidance, Minimization, and Monitoring Plan (AMMP) shall be prepared and approved by the City and the wildlife agencies prior to such encroachment in accordance with Chapter 6 of the SCVHP.

MM BIO-2.3: Should a burrowing owl be located during the non-breeding season (September through January), a 250-foot buffer shall be established and construction activities shall not be allowed within the 250-foot buffer of the active burrow(s) used by any burrowing owl unless the following avoidance measures are adhered to:

- A qualified biologist shall monitor the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).

- The same qualified biologist shall monitor the owls during construction. If the biologist determines there is a change in owl nesting and foraging behavior as a result of construction activities, these activities shall cease within the 250-foot buffer.

- If the owls are gone from the burrows for at least one week, the project applicant may request approval from the habitat agency to excavate all usable burrows within the construction area to prevent owls from reoccupying the site. After all usable burrows are excavated, the buffer zone shall be removed and construction may continue;

MM BIO-2.4: In the event the voluntary relocation of site burrowing owls does not occur (defined as owls having vacated the site for 10 or more consecutive days), the project applicant can request permission to engage in passive relocation during the non-breeding season through the standard SCVHP application process (Section 6.8 of the SCVHP).

If passive relocation is granted, additional measures may be required by the Habitat Agency.

If the owls voluntarily vacate the site for 10 or more consecutive days, as documented by a qualified biologist, the project applicant could seek permission from the Santa Clara Valley Habitat Agency to have the qualified biologist take measures to collapse vacated and other suitable burrows to ensure that owls do not recolonize the site, in accordance with the SCVHP.

Riparian and Wetland Habitats

Impacts to riparian habitats or areas regulated by the USACE, RWQCB, or CDFW would be considered significant. The following avoidance and minimization measures and compensation, consistent with the SCVHP (Conditions 3, 4, and 12 from Chapter 6) are included in the project to reduce impacts to a less than significant level.

MM BIO-3.1: Prior to the start of any grading or other soil disturbing activities, the project applicant shall be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) consistent with the City's NDPES C3 provisions.

MM BIO-3.2: A qualified biological monitor shall visit the project site daily during outfall construction to verify that these measures are being fully implemented and are effective.

MM BIO-3.3: Removal of riparian vegetation and/or trees for the potential installation of the outfall shall be limited to the minimum extent required.

MM BIO-3.4: The project applicant shall ensure that all seed mixtures used for revegetation of the impacted riparian habitat of Coyote Creek shall be native or sterile non-native species only. No invasive non-native plant species shall be used for revegetation.

MM BIO-3.5: The project applicant shall comply with all requirements of the CDFW, U.S. Army Corps of Engineers (USACE), and Regional Water Quality Control Board (RWQCB) permits required for the construction of the outfall, including any additional mitigation measures and all monitoring requirements.

Trees

The following measure shall be implemented to reduce impacts to trees (that may be retained) from project construction to a less than significant level. All mitigation measures for impacts to trees that may be retained are subject to agreement with the Director of the Department of PBCE.

MM BIO-4.1: The project applicant, in consultation with a certified arborist or biologist, shall submit a Tree Protection Plan (TPP) to the Supervising Environmental Planner of the Department of Planning, Building, and Code Enforcement for trees to be preserved. The TPP shall include, but is not limited to:

- Number of trees and location of trees to be protected
- Final landscaping proposal
- Tree Protection Zone (TPZ)
- Size and location of TPZ
- Specific recommendation and suggestions or recommendation for each TPZ if applicable
- Maintenance methodology for tree protection zones during the entire demolition and construction period
- Irrigated schedule
- Pruning schedule for preserved trees, if applicable
- Herbicides and other products recommended to be used on preserved trees

3.3.4 Conclusion

The proposed project includes mitigation measures consistent with the plans and policies of CDFW, USACE, RWQCB, and the City of San José's General Plan and Municipal Code. For these reasons, the project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. **(Less than Significant Impact)**

With implementation of the identified mitigation measures and permit conditions, the proposed project would have a less than significant impact to special-status species, habitat, and trees. **(Less than Significant With Mitigation)**

3.4 CULTURAL RESOURCES

The following analysis is based on a historic evaluation prepared by *Archives & Architecture* in March 2017 and a cultural resources survey completed by *Holman & Associates* in November 2016. The historic report is provided in Appendix F of this EIR. The cultural resources report is on file at the City of San José Department of PBCE.

3.4.1 <u>Environmental Setting</u>

3.4.1.1 *Regulatory Framework*

Historic Structures

Below is an overview of criteria used to assess the historic significance and eligibility of a building, structure, object, site or district for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and the City of San José Historic Resources Inventory.

National Criteria

The NRHP is the nation's most comprehensive list of historic resources and includes historic resources significant in American history, architecture, archeology, engineering and culture, at the local, state and national level. National Register Bulletin Number 15, How to Apply the National Register Criteria for Evaluation, describes the Criteria for Evaluation as being composed of two factors. First, the property must be "associated with an important historic context", and second the property must retain integrity of those features necessary to convey its significance.

The National Register identifies four possible context types or criteria, at least one of which must be applicable at the national, state, or local level. As listed under Section 8, "Statement of Significance," of the National Register of Historic Places Registration Form, these are:

A. Property is associated with events that have made a significant contribution to the broad patterns of our history.

B. Property is associated with the lives of persons significant in our past.

C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

D. Property has yielded, or is likely to yield, information important to prehistory or history.

State of California Criteria

The California Office of Historic Preservation's Technical Assistance Series #6, *California Register and National Register: a Comparison*, outlines the differences between the federal and state processes. The context types to be used when establishing the significance of a property for listing on the California Register of Historical Resources are very similar, with emphasis on local and state significance. They are:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or

2. It is associated with the lives of persons important to local, California, or national history; or

3. It embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values; or

4. It has yielded, or is likely to yield, information important to prehistory or history of the local area, California, or the nation.

City of San José Criteria for Local Significance

In accordance with the City of San José's Historic Preservation Ordinance (Chapter 13.48 of the Municipal Code), a resource qualifies as a City Landmark if it has "special historical, architectural, cultural, aesthetic or engineering interest or value of an historic nature" and is one of the following resource types:

1. An individual structure or portion thereof;
2. An integrated group of structures on a single lot;
3. A site, or portion thereof; or
4. Any combination thereof.

The ordinance defines the term "historical, architectural, cultural, aesthetic, or engineering interest or value of an historic nature' as deriving from, based on, or related to any of the following factors:

1. Identification or association with persons, eras or events that have contributed to local, regional, state or national history, heritage or culture in a distinctive, significant or important way;

2. Identification as, or association with, a distinctive, significant or important work or vestige:

   a. Of an architectural style, design or method of construction;
   b. Of a master architect, builder, artist or craftsman;
   c. Of high artistic merit;
   d. The totality of which comprises a distinctive, significant or important work or vestige whose component parts may lack the same attributes;
   e. That has yielded or is substantially likely to yield information of value about history, architecture, engineering, culture or aesthetics, or that provides for existing and future generations an example of the physical surroundings in which past generations lived or worked; or
   f. That the construction materials or engineering methods used in the proposed landmark are unusual or significant of uniquely effective.

3. The factor of age alone does not necessarily confer a special historical, architectural, cultural,

aesthetic, or engineering significance, value or interest upon a structure or site, but it may have such effect if a more distinctive, significant or important example thereof no longer exists (Section 13.48.020 A).

The ordinance also provides a designation of a district: "a geographically definable area of urban or rural character, possessing a significant concentration or continuity of site, building, structures or objects unified by past events or aesthetically by plan or physical development (Section 13.48.020 B).

Any potentially historic property can be nominated for designation as a city landmark by the City Council, the Historic Landmarks Commission or by application of the owner or the authorized agent of the owner of the property for which designation is requested.

Based upon the criteria of the City of San José Historic Preservation Ordinance, the San José Historic Landmarks Commission established a quantitative process, based on the work of Harold Kalman (1980), by which historical resources are evaluated for varying levels of significance. This historic evaluation criterion, and the related Evaluation Rating Sheets, is utilized within the Guidelines for Historic Reports published by the City's Department of PBCE, as last revised on February 26, 2010.

Although the criteria listed within the Historic Preservation Ordinance are the most relevant determinants when evaluating the significance of historic resources in San José, the numerical tally system is used as a general guide for the identification of potential historic resources. The "Historic Evaluation Sheet" reflects the historic evaluation criteria for the Registers as well as the City's Historic Preservation Ordinance, and analyzes resources according to the following criteria:

- Visual quality/design
- History/association
- Environment/context
- Integrity
- Reversibility

A rating with numerical "points" is assigned by a qualified evaluator according to the extent to which each building meets the criteria listed above.

33 and above points Structure of Merit (SM)
1-32 points Evaluated and found to be non-significant

The numerical rating system is not used to determine eligibility of a property for City Landmark designation.

Envision San José General Plan

The Envision San José 2040 General Plan includes policies applicable to all development projects in San José. The following policies are specific to cultural resources and are applicable to the proposed project.

Policy ER-10.1: For proposed development sites that have been identified as archaeologically or paleontologically sensitive, require investigation during the planning process in order to determine whether potentially significant archaeological or paleontological information may be affected by the project and then require, if needed, that appropriate mitigation measures be incorporated into the project design.

Policy ER-10.2: Recognizing that Native American human remains may be encountered at unexpected locations, impose a requirement on all development permits and tentative subdivision maps that upon discovery during construction, development activity will cease until professional archaeological examination confirms whether the burial is human. If the remains are determined to be Native American, applicable state laws shall be enforced

Policy ER-10.3: Ensure that City, State, and Federal historic preservation laws, regulations, and codes are enforced, including laws related to archaeological and paleontological resources, to ensure the adequate protection of historic and prehistoric resources.

Policy LU-13.4: Require public and private development projects to conform to the adopted City Council Policy on the Preservation of Historic Landmarks.

Policy LU-13.9: Promote the preservation, conservation, rehabilitation, restoration, reuse, and/ or reconstruction, as appropriate, of contextual elements (e.g., structures, landscapes, street lamps, street trees, sidewalk design, signs) related to candidate and/or landmark buildings, structures, districts, or areas.

Policy LU-14.4: Discourage demolition of any building or structure listed on or eligible for the Historic Resources Inventory as a Structure of Merit by pursuing the alternatives of rehabilitation, re-use on the subject site, and/or relocation of the resource.

Policy LU-16.4: Require development approvals that include demolition of a structure eligible for or listed on the Historic Resources Inventory to salvage the resource's building materials and architectural elements to allow re-use of those elements and materials and avoid the energy costs of producing new and disposing of old building materials.

Policy CD-1.26: Apply the Historic Preservation Goals and Policies of this Plan to proposals that modify historic resources or include development near historic resources.

Alviso Master Plan

The *Alviso Master Plan* includes policies applicable to all development projects within the plan area. The following policies are specific to cultural resources and are applicable to the proposed project.

Historic Preservation Policy 1: Existing structures with significant historic or architectural merit should be preserved where possible and may be occupied with any land use which is compatible with the existing and planned character of surrounding properties.

3.4.1.2 *Existing Conditions*

Native Americans occupied Santa Clara Valley and the greater Bay Area for more than 1,000 years. The exact time period of the Ohlone (originally referred to as Costanoan) migration into the Bay Area is debated by scholars. Dates of the migration range between 3000 B.C. and 500 A.D. Regardless of the actual timeframe of their initial occupation of the Bay Area and, in particular, Santa Clara Valley, it is known that the Ohlone had a well-established population of approximately 7,000 to 11,000 people with a territory that ranged from the San Francisco Peninsula and the East Bay south through the Santa Clara Valley and San Juan Bautista and Monterey.

The Ohlone lived in small villages referred to as tribelets. Each tribelet occupied a permanent primary habitation site and also had smaller resource procurement camps. The Ohlone, who were hunter/gatherers, traveled between their various village sites to take advantage of seasonal food resources (both plants and animals). During winter months, tribelets would merge to share food stores and engage in ceremonial activities.

The project site is located in a culturally sensitive area due to known prehistoric and historic occupation of San José and the Bay and the site's proximity to Coyote Creek. Native American settlements are commonly associated with the abundant food supply in the Santa Clara Valley and they often established settlements near local waterways.

Literature Review

A literature review was completed to document any recorded archaeological sites within one-quarter mile of the project site. The review confirmed that no cultural resources have been recorded within the boundaries of the main project site or within the proposed locations of the new utility lines. One resource, CA-SCL-528, is located within the project area. The site, first recorded in 1983 contains a low-density midden with bay and marine shells, bones, and heat affected rock. Historic era artifacts were also identified during the 1983 survey, as well as one burial. Agricultural operations on the project site and surrounding area have resulted in a high level of disturbance in the top 20 inches of soil.

In 1997, a survey was completed for the proposed Los Esteros Substation and Transmission Routes project, which included portions of the project site. No cultural resources were found. Another survey in 2000 for the U.S. Dataport project included the project site. The site survey found scattered fragments of non-historic age. Nevertheless, the area was deemed to have a high potential for prehistoric and historic-era resources.

In 2009, further testing was completed north of CA-SCL-528 to identify further artifacts potentially associated with that resource. Only minor fragments were found but the boundaries of the resource were further defined.

Twelve additional surveys have been completed within portions of the current project area, most of which were linear studies related to Coyote Creek, Highway 237, trails, and a telecommunication tower.

Two historical complexes have been recorded on the east side of Coyote Creek related to Murphy Ranch/Shaughnessy-Murphy Ranch and an early twentieth century agricultural compound. A Native

American site was recorded generally southeast of the site (just outside the one-quarter mile project area radius) which contained a shell midden with dietary faunal remains, heat affected rock, and human remains. In this area of northern San José, Native American sites have been recorded on the wide valley terraces within one-half mile of major waterways and creeks and adjacent to the original Bay shoreline.

Site Survey

In October 2016, a survey was completed for the project site and off-site utility corridors. The main project site had been recently disked. The utilities corridors were covered with a dense layer of matted grass and had limited visibility. No surface indications of any buried archaeological deposits or cultural materials was found.

Structures on the Project Site

Two residential buildings, one mobile home and multiple farm-related accessory structures are located in the southern portion of the project site. Both of the permanent houses are more than 50 years old and are discussed in detail below.

<u>1657 Alviso-Milpitas Road (Edgar Jackson House)</u>

The building at 1657 Alviso-Milpitas Road is a one-story Craftsman Prairie-style house with Mission Revival details that was constructed in 1929/30. The house was originally constructed for Edgar Jackson, who operated a 79-acre pear orchard on the site. It appears that the house was designed by the firm Wolfe & Higgins following the death of Frank Delos Wolfe, although the listing was not found in construction journals from the period.

The house is a square-shaped, wood-frame structure clad in stucco with a symmetrical façade. The defining features of the building include a small recessed entry patio, an ornate arched door within a stoop with a stucco-clad, arched, Mission Revival style surround, and a hipped roof. One of the original entry doors on the west elevation has been sealed and some windows have been replaced. Some original windows do, however, remain including tall casement windows with multi-lite glazing on the southeast corner of the building and Mission Revival style arched multi-lite windows on the east façade. To the rear of the house is a matching garage and attached shed.

1591 Alviso-Milpitas Road

The buildings at 1591 Alviso-Milpitas Road consist of a house and related ancillary buildings which serve as housing and staging areas for current ranch operations. The house, mostly hidden behind large trees and shrubs, is a one-story National-style house that was constructed around 1899.

The house is a simple board-wall structure that has been clad with single-bevel teardrop wood siding. The siding may be part of the original construction or may have been added at a later date as the siding does not match up on all sides of the structure. The house has a covered front porch, which is a replacement. The roof is peaked and a small six-lite attic window is centered over the porch. The roof has been replaced with standing-seam metal roofing. The house has no foundation and sits on a wood base. It appears that the house may have been relocated to the project site from another location. The house is in a deteriorated condition. The shed addition is of make-shift construction and has exposed rafter-tails at the rear of the structure, which indicates it was constructed in the twentieth century.

As shown in the photo on the right, a second ancillary residence is located behind the main house. It is a circa 1960s prefabricated structure with metal cladding.

North of the second dwelling is a large prefabricated metal farm building (circa 1960s), as shown in the photo to the left.

The most northern building (shown in the photo to the right) is an early twentieth century equipment shed which was likely associated with the 1920s development on the project site. The shed is of post and beam construction with seven bays and a corrugated metal roof. The two most northern bays were likely added to the original structure. This shed is in a deteriorated state.

The property was originally owned by William Boots, a local farmer and horse breeder. The project site was only a portion of his total land holdings. Mr. Boots died in 1900 and his wife and children continued operations. His son, William Boots Jr., took over the farming operations site in 1906 and farmed the land until 1913 when the property was sold. Edgar Jackson, a farmer, entrepreneur, and community leader, purchased the property sometime before 1922, constructed the home, and operated a pear orchard until the mid-1960s, when the property was sold and converted to row crops. Mr. Jackson lived on-site until the mid-1950s at which time the house became a rental property and has continued as such to the present time.

The project site was part of a larger farm owned and operated by William Boots. While the site has been used for agriculture for approximately 150 years, in its current state it is not representative of early row crop and later orchard development in the area. The main grouping of buildings has a mixed history and it appears some original buildings are no longer extant. The Jackson House, while constructed in the 1920s, was separated from later ranch operations and does not convey the agricultural history of the site.

While William Boots was a local farmer, he is not considered locally significant regarding that business. He may have some significance as an early horse breeder, but breeding operations were not located on the project site. Mr. Jackson has some importance in twentieth century North San José agriculture, although his contributions are not known to be significant. As a result, neither the site nor the buildings are representative of persons of significance at a local or state level.

The main grouping of buildings are vernacular and lack distinction. As noted above, however, the Jackson House appears architect-designed and may be associated with the firm of Wolfe & Higgins following the death of Frank Delos Wolfe. It has been reviewed by Krista Van Laan, author of *Wolfe and Higgins; Master Architects of the Spanish Revival*, and she concurs that the structure is a Wolfe & Higgins design based on the design features and year of construction.

While the Jackson House is an unusual design and has well-preserved character associated with both Prairie and Craftsman residential architecture, it is not a distinctive example of the work of the assumed architects Wolfe and Higgins. Designs such as the Jackson House, if attributed to Wolfe and Higgins, and commissioned after Frank's death, are derivative of his earlier recognized work and often lack the distinctive qualities that are reflective of the hand of a master architect. While William E. Higgins is recognized as an important San José architect in his own right, the house appears more associated with Frank's son Carl, who provided continuity to the firm in the late 1920s until Higgins became the sole proprietor.

The site and buildings have not yielded, nor are likely to yield, information important to prehistory or history of the local area, California, or the nation. The buildings are not eligible for the CRHP under any criterion and are not considered a historic resources.

When considering the City's landmark eligibility criteria in the context of the California Register eligibility considerations as well as qualities specific to the local landmark designation process, the property does not appear to qualify as a City Landmark. Under the City of San José evaluation rating system, the Jackson House scores 50.16 points, indicating that it qualifies for listing on the San José Historic Resources Inventory as a Structure of Merit. The collection of buildings at 1591 Alviso-Milpitas Road scored 26.64 points, indicating that they do not qualify for listing on the San José Historic Resources Inventory. None of the buildings would qualify as a candidate City Landmark.

3.4.2 Cultural Resources Impacts

3.4.2.1 *Thresholds of Significance*

For the purposes of this EIR, a cultural resources impact is considered significant if the project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
- Disturb any human remains, including those interred outside of dedicated cemeteries;
- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or
    - 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 this criteria, the significance of the resource to a California Native American tribe shall be considered.

3.4.2.2 *Consistency with Plans*

The project would have no impact on historic structure on or off the project site and would be consistent with General Plan Policies LU-13.4, LU-13.9, LU-14.4, LU-16.4, and CD-1.26 and Master Plan Policy *Historic Preservation Policy 1*. With implementation of permit conditions, the project would be consistent with Policies ER-10.1, ER-10.2, and ER-10.3.

3.4.2.3 *Impacts to Prehistoric and Historic Subsurface Archaeological Resources*

As discussed in Section 3.5.1.2, the project site is near a recorded prehistoric site, the boundaries of which have not been fully defined. Based on the known prehistoric and historic occupation of the immediate project area and project site, the location of the site adjacent to Coyote Creek, and findings of previous archaeological work in the project area, it is reasonable to assume that prehistoric and historic subsurface artifacts (including human remains) could be found on the project site.

The *2040 General Plan Final EIR* concluded that with implementation of existing regulations and adopted General Plan policies, new development within San José would have a less than significant impact on subsurface prehistoric and historic resources.

Policy ER-10.1 states that for proposed development sites that have been identified as archaeologically or paleontologically sensitive, the City will require investigation during the planning process in order to determine whether potentially significant archaeological or paleontological information may be affected by the project and then require, if needed, that appropriate mitigation measures be incorporated into the project design.

The CEQA Guidelines provide detailed direction on the requirements for avoiding or mitigating significant impacts to historical and archaeological resources. Section 15064.5(b)(4) of the Guidelines states that a lead agency shall identify mitigation measures and ensure that the adopted measures are fully enforceable through permit conditions, agreements, or other measures. In addition, CEQA Guidelines Section 15126.4(b)(3) states that public agencies should, whenever feasible, seek to avoid damaging effects on any historical resources of an archaeological nature. Preservation in place is the preferred manner of avoiding impacts to archaeological sites, although data recovery through excavation is acceptable if preservation is not feasible. If data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historic resource, needs to be prepared and adopted prior to any excavation being undertaken.

As proposed, the project would excavate the site to a minimum depth of 10 feet to accommodate building foundations and utilities. As a result, subsurface resources on-site would be disturbed if present on-site.

Impact CUL-1: Construction of the proposed project could result in significant impacts to subsurface cultural resources should they be located on-site. **(Significant Impact)**

3.4.2.4 *Paleontological Resources*

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. Geologic units of Holocene age are generally not considered sensitive for paleontological resources, because biological remains younger than 10,000 years are not usually considered fossils; however, mammoth remains were found along the nearby Guadalupe River in San José in 2005. These sediments have low potential to yield fossil resources or to contain significant nonrenewable paleontological resources. These recent sediments, however, may overlie older Pleistocene sediments with high potential to contain paleontological resources. These older sediments, often found at depths of greater than 10 feet below the ground surface, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates. Based on the underlying geologic formation of the project site, the *2040 General Plan Final EIR* found the project site to have a high sensitivity (at depth) for paleontological resources.

The *2040 General Plan Final EIR* concluded that with implementation of existing regulations (California Public Resources Code Section 30244) and adopted General Plan policies ER-10.1 and ER-10.3, new development within San José would have a less than significant impact on paleontological resources. To protect from inadvertent discovery during construction, the project shall comply with the following permit conditions:

<u>Permit Conditions:</u>

- The project proponent shall ensure all construction personnel receive paleontological resources awareness training that includes information on the possibility of encountering fossils during construction; the types of fossils likely to be seen, based on past finds in the project area; and proper procedures in the event fossils are encountered. Worker training shall be prepared and presented by a qualified paleontologist.

- If vertebrae fossils are discovered during construction, all work on the site shall stop immediately until a qualified professional paleontologist can assess the nature and importance of the find and recommend an appropriate treatment plan. The treatment plan shall be submitted to the PBCE Supervising Environmental Planner and Historic Preservation Officer to approval. The approved treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds.

While excavation on-site would reach a maximum depth of 10 feet and the site is near the original Bay shoreline, it is unlikely that paleontological resources would be discovered because no paleontological resources have been discovered in this area of San José or on the project site in numerous surveys and excavations. With implementation of the identified permit conditions and compliance to identified regulations and General Plan policies, the project would result in a less than significant impact on paleontological resources. **(Less Than Significant Impact)**

3.4.2.5 *Impacts to Historic Structures*

Under CEQA, a structure need not be listed on a national, state, or local register to qualify as a significant resource. A structure is considered a significant resource under CEQA if it is found to be eligible for inclusion on a national, state, or local register. Furthermore, as outlined in the criteria of significance above, a prized architectural style or appealing aesthetic is not the sole determining factor in the historical significance of a structure, as structures can also be significant for association with important persons or events.

Public opinions on what is visually appealing or architecturally important change over time, so a structure's aesthetic may not be appreciated by modern standards. That does not, however, preclude it from being eligible for listing as a historic resource. The Jackson House was found to be eligible for listing on the City's Historic Resources Inventory as a Structure of Merit, but is not a candidate City Landmark. At the discretion of the Historic Preservation Officer, the project and historic report shall be reviewed by the Historic Landmarks Commission to make a recommendation as to whether the Jackson House should be included on the San José Historic Resources Inventory.

The City's General Plan Policy LU-14.4 discourages the demolition of any building or structure listed on or eligible for the Historic Resources Inventory as a Structure of Merit by pursuing the alternatives of rehabilitation, re-use on the subject site, and/or relocation of the resource. Therefore, the project applicant has proposed that prior to implementation of development on the southern portion of the project site, they would implement the following Standard Measures:

Standard Measures:

- Photo Documentation:

  Professional Qualifications: The photo documentation shall be conducted by a qualified consultant meeting the professional qualification standards of the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.* Department of Parks and Recreation, Primary Record (DPR A) and Building, Structure, and Object (DPR 523B) forms:
    - The bound and electronic copy of the Historic Report and/or DPR forms for the Structures/Site

  Non-Historic American Building Survey Archival Photo-Documentation:

    - Cover sheet-The documentation shall include a cover sheet identifying the following: photographer, address of building, common or historic building name, date of construction, date of photographs and description of photographs.
    - Camera- A 35mm camera.
    - Film-Must use black and white film; tri-X, Plus-X, or T-Max film is recommended.
    - View-Perspective view-front and other elevations.
    - Lighting-Sunlight is usually preferred for exteriors, especially of the front facade.
    - Technical-All areas of the photograph must be in sharp focus

  Submission of Photo-Documentation: Evidence that the documentation, including the original prints and negatives, has been submitted to History San Jose, 1650 Senter Road, San Jose, CA 95112-2599), shall be submitted to the Historic Preservation Officer. Digital photos may be provided as a supplement to, but not in place of, the above photo-documentation. The above shall be accompanied by a transmittal stating that the documentation is submitted in fulfillment of standard measures for the loss of the Structure of Merit which shall be named and the address stated.

- **Relocation**: Prior to issuance of Public Works clearance, the structure(s) shall be advertised for relocation. The project applicant shall provide evidence that the structure has been retained and advertised for relocation by placing an advertisement in a newspaper of general circulation, posting on a website, and on-site posting for 60 days. The draft public notice shall be submitted to the City's Historic Preservation Officer for review prior to publication.

- **Salvage**: If relocation is not successful, prior to issuance of Public Works Clearance, the structure and site shall be retained and advertised for salvage by placing an advertisement in a newspaper of general circulation, posting on a website, and on-site posting for 30 days.

While the City deems Structures of Merit as important local resources, they are not considered significant historic resources under CEQA. Therefore, demolition of this structure would have a less than significant impact on historic structures. **(Less Than Significant Impact)**

3.4.3 Mitigation and Avoidance Measures

3.4.3.1 *Impacts to Subsurface Cultural Resources*

To comply with General Plan Policy ER-10.1 and reduce impacts to subsurface cultural materials, the following measures are included in the proposed project.

MM CUL-1.1: Prior to the issuance of any grading permit, the project applicant shall be required to complete subsurface testing to determine the extent of possible resources on-site. Subsurface testing shall be completed by a qualified archaeologist. Based on the findings of the subsurface testing, an archaeological resources treatment plan shall be prepared by a qualified archaeologist and submitted to PBCE Supervising Environmental Planner and Historic Preservation Officer for approval prior to the issuance of grading permits.

MM CUL-1.2: The project applicant shall implement the approved treatment plan prior to the issuance of grading permits. The approved treatment plan shall utilize data recovery methods to reduce impacts on subsurface resources.

MM CUL-1.3: All prehistoric and historic-era features identified during exploration shall be evaluated by a qualified archaeologist based on the California Register of Historical Resources criteria consistent with the archaeological treatment plan. After completion of the field work, all artifacts shall be cataloged and the appropriate forms shall be completed and filed with the Northwest Information Center of the California Archaeological Inventory at Sonoma State University by the qualified archaeologist in coordination with the PBCE Supervising Environmental Planner and Historic Preservation Officer prior to issuance of occupancy permits (temporary or final).

MM CUL-1.4: In the event that prehistoric or historic resources are encountered during excavation and/or grading of the site, all activity within a 50-foot radius of the find shall be stopped, the Director of PBCE shall be notified, and a qualified archaeologist shall examine the find. The archaeologist shall evaluate the find(s) to determine if they meet the definition of a historical or archaeological resource and make appropriate recommendations regarding the disposition of such finds prior to issuance of building permits. If the finds do not meet the definition of a historical or archaeological resources, no further study or protection is necessary prior to project implementation. If the find(s) does meet the definition of a historical or archaeological resource, then it shall be avoided by project activities. If avoidance is not feasible, adverse effects to such resources shall be mitigated in accordance with the recommendations of the archaeologist. Recommendations shall include collection, recordation, and analysis of any significant cultural materials. A report of findings documenting any data recovery would be submitted to the Director of PBCE and the Northwest Information Center.

The project applicant shall ensure that construction personnel does not collect or move any cultural material, and shall ensure that any fill soils that may be used for construction purposes do not contain any archaeological materials.

MM CUL-1.5: In the event that human remains are discovered during excavation and/or grading of the site, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified immediately and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the identification. Once the NAHC identifies the most likely descendants (MLD), the descendants shall make recommendations regarding proper burial (including the treatment of grave goods), which shall be implemented in accordance with Section 15064.5(e) of the CEQA Guidelines.

The archaeologist shall recover scientifically-valuable information, as appropriate and in accordance with the recommendations of the MLD. A report of findings documenting any data recovery shall be submitted to the Director of PBCE and the Northwest Information Center.

3.4.4 Conclusion

With implementation of the conditions of approval and permit conditions measures, the proposed project would not result in significant impacts to subsurface archaeological resources. **(Less Than Significant Impact with Mitigation)**

The proposed project would be consistent with applicable City policies and regulatory programs and, as a result, would have a less than significant impact on paleontological resources impact. **(Less Than Significant Impact)**

The proposed project would have a less than significant impact on historic structures. **(Less Than Significant Impact)**

3.5 ENERGY

The following discussion is based, in part, on an air quality analysis prepared by *Illingworth & Rodkin* in November 2016. The report can be found in Appendix B.

3.5.1 <u>Environmental Setting</u>

The proposed project site is fallow farmland, with energy consumption limited to farm equipment used for weed control (disking) and for the three residential structures.

Energy consumption is analyzed in an EIR because of the environmental impacts associated with its production and usage. Such impacts include the depletion of nonrenewable resources (e.g., oil, natural gas, coal, etc.) and emissions of pollutants during both the production and consumption phases of energy use.

Energy usage is typically quantified using the British thermal unit (Btu).[9] As points of reference, the approximate amount of energy contained in a gallon of gasoline, a cubic foot of natural gas, and a kilowatt hour (kWh) of electricity are 123,000 Btus, 1,000 Btus, and 3,400 Btus, respectively. Utility providers measure gas usage in therms. One therm is approximately equal to 100,000 Btus.

Electrical energy is expressed in units of kilowatts (kW) and kWh. One kW, a measurement of power (energy used over time), equals one thousand joules[10] per second. A kWh is a measurement of energy. If run for one hour, a 1,000 watt (one kW) hair dryer would use one kWh of electrical energy. Other measurements of electrical energy include the megawatt (1,000 kW) and the gigawatt (1,000,000 kW).

Total energy usage in California was approximately 7,600 trillion Btus in the year 2014 (the most recent year for which this specific data was available).[11] The breakdown by sector was approximately 18 percent for residential uses, 19 percent for commercial uses, 24 percent for industrial uses, and 39 percent for transportation.[12]

3.5.1.1 *Regulatory Framework*

Federal

At the federal level, energy standards set by the United States Environmental Protection Agency (EPA) apply to numerous consumer and commercial products (e.g., the EnergyStar™ program). The EPA also sets fuel efficiency standards for automobiles and other modes of transportation.

---

[9] A Btu is the amount of energy that is required to raise the temperature of one pound of water by one degree Fahrenheit.
[10] As defined by the International Bureau of Weights and Measures, the joule is a unit of energy or work. One joule equals the work done when one unit of force (a Newton) moves through a distance of one meter in the direction of the force.
[11] United States Energy Information Administration (EIA). California Energy Consumption Estimates 2014. Accessed December 7, 2016. http://www.eia.gov/state/?sid=CA#tabs-2.
[12] EIA. California Energy Consumption by End-Use Sector, 2014. Accessed December 7, 2016. http://www.eia.gov/beta/state/seds/data.cfm?incfile=/state/seds/sep_sum/html/sum_btu_1.html&sid=CA.

State of California

Renewable Energy Standards

In 2002, California established its Renewables Portfolio Standard (RPS) Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2010. In 2006, California's 20 percent by 2010 RPS goal was codified under Senate Bill (SB) 107. Under the provisions of SB 107, investor-owned utilities were required to generate 20 percent of their retail electricity using qualified renewable energy technologies by the end of 2010. In 2008, Executive Order S-14-08 was signed into law and required that retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Pacific Gas and Electric Company (PG&E) is the electricity provider to the project site. PG&E's 2015 electricity mix was 30 percent renewable.[13]

In October 2015, Governor Brown signed SB 350 to codify California's climate and clean energy goals. A key provision of SB 350 for retail sellers and publicly owned utilities, requires them to procure 50 percent of the state's electricity from renewable sources by 2030.

Building Codes

The Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations (Title 24), was established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 is updated approximately every three years; the 2013 standards became effective July 1, 2014. The 2016 Title 24 updates will likely go into effect on January 1, 2017.[14] Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments.[15]

In January 2010, the state adopted the California Green Building Standards Code (CALGreen), which established mandatory green building standards for buildings in California. In 2013, the code was subsequently updated. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality.

City of San José

At the local level, the City of San José sets green building standards for municipal development. All projects are required to submit a Leadership in Energy and Environmental Design (LEED)[16], GreenPoint[17], or Build It Green checklist with the development proposal. Private developments are required to implement green building practices if they meet the Applicable Projects criteria defined by Council Policy 6-32 and shown in Table 3.5-1 below.

---

[13] PG&E. Exploring Clean Energy Solutions. Accessed December 7, 2016. https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page.
[14] California Building Standards Commission. 2015 Triennial Code Adoption Cycle. Accessed December 7, 2016. http://www.bsc.ca.gov/.
[15] California Energy Commission (CEC). Building Energy Efficiency Program. 2013. Accessed December 7, 2016. http://www.energy.ca.gov/title24/.
[16] Created by the U.S. Green Building Council, LEED is a certification system that assigns points for green building measures based on a 110-point rating scale.
[17] Created by Build It Green, GreenPoint is a certification system that assigns points for green building measures based on a 381-point scale for multi-family developments and 341-point scale for single-family developments.

Table 3.5-1: Private Sector Green Building Policy Applicable Projects	
Applicable Project	**Minimum Green Building Rating**
Commercial/Industrial – Tier 1 (Less than 25,000 Square Feet)	LEED Applicable New Construction Checklist
Commercial/Industrial – Tier 2 (25,000 Square Feet or greater)	LEED Silver
Residential – Tier 1 (Less than 10 units)	GreenPoint or LEED Checklist
Residential – Tier 2 (10 units or greater)	GreenPoint Rated 50 points or LEED Certified
High Rise Residential (75 feet or higher)	LEED Certified
Source: City of San José. Private Sector Green Building Policy: Policy Number 6-32. October 7, 2008. http://www3.sanJoséca.gov/clerk/cp_manual/CPM_6_32.pdf.	

3.5.1.2 *Existing Conditions*

Electricity

The electricity supply in California involves a complex grid of power plants and transmission lines. In 2015, California produced approximately 75 percent of the electricity it consumed; it imported the remaining 25 percent from the Pacific Northwest (generated by wind), and the Southwest (generated at coal-fired and natural gas-fired power plants, and from nuclear power plants). Electricity supplied from out-of-state coal-fired power plants has decreased since 2006 after the enactment of a state law requiring California utilities to limit new long-term financial investments to power plants that meet California emissions.[18]

The bulk of California's electricity comes from power plants. In 2015, 44 percent of the state's electricity was generated by natural gas, nine percent by nuclear, five percent by large hydroelectric, and six percent by coal. Renewable sources such as rooftop photovoltaic systems, biomass power plants, and wind turbines, accounted for 22 percent of California's electricity. Fourteen percent of California's power comes from unspecified sources. California also leads the nation in electricity generation from solar, geothermal, and biomass resources.[19]

In 2015, total electrical system power for California was 282,896 gigawatt-hours (GWh), about one percent lower than 2014. California's in-state electricity production decreased by 1.5 percent at 196,195 GWh compared to 199,193 GWh from 2014 levels. Growth in annual electricity consumption declined in 2015 reflecting increased energy efficiency. Per capita drops in electrical consumption are predicted through 2025 as a result of energy efficiency gains and increased self-generation (particularly for photovoltaic systems).[20] Due to population increases, however, it is

[18] EIA. California State Profile and Energy Sources. Accessed December 7, 2016. https://www.eia.gov/state/analysis.cfm?sid=CA.
[19] CEC. Energy Almanac. Total Electricity System Power. Accessed December 7, 2016. http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html.
[20] CEC. *California Energy Demand 2016-2026, Revised Electricity Forecast*. Accessed December 7, 2016. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN207439_20160115T152221_California_Energy_Demand_20162026_Revised_Electricity_Forecast.pdf.

estimated that future demand in California for electricity will grow at approximately one percent each year through 2025, and that 320,862 GWh of electricity would be utilized in the state in 2025.[21]

PG&E is the City of San José's energy utility, providing both natural gas and electricity for residential, commercial, industrial, and municipal uses. PG&E generates or buys electricity from hydroelectric, nuclear, renewable, natural gas, and coal facilities. In 2015, natural gas facilities provided 25 percent of PG&E's electricity delivered to retail customers; nuclear plants provided 23 percent; hydroelectric operations provided six percent; renewable energy facilities including solar, geothermal, and biomass provided 30 percent; and 17 percent was unspecified.[22]

Electricity usage for differing land uses varies substantially by the type of uses in a building, the type of construction materials used, and the efficiency of the electricity-consuming devices used. Electricity in Santa Clara County in 2014 was consumed primarily by the commercial sector (77 percent), the residential sector consuming 23 percent. In 2015, a total of approximately 16,812 GWh of electricity were consumed in Santa Clara County.[23]

Natural Gas

In 2013, approximately ten percent of California's natural gas supply came from in-state production, while 90 percent was imported from other western states and Canada.[24] In 2015, approximately 36 percent of the natural gas delivered for consumption in California was for electricity generation, 35 percent for industrial uses, 18 percent for residential uses, 10 percent for commercial uses, and less than one percent for transportation. As with electricity usage, natural gas usage depends on the type of uses in a building, the type of construction materials used, and the efficiency of gas-consuming devices. In 2015, the State of California consumed approximately 2.4 billion MBtu of natural gas (or 2.4 quadrillion Btu) of natural gas.[25][26] In Santa Clara County, a total of 41 MBtu were consumed in 2015.[27]

Overall demand for direct-service natural gas in the commercial and residential sectors in California is expected decrease by 1.1 percent between 2015 and 2026 as a result of overall energy efficiency. Demand for natural gas at power plants for electricity generation is expected to decrease by 2.1 percent between 2015 and 2026 as a result of the implementation of state-mandated RPS targets.[28]

---

[21] CEC. California Energy Demand Updated Forecast 2015-2015. Accessed December 7, 2016. http://www.energy.ca.gov/2014publications/CEC-200-2014-009/CEC-200-2014-009-SD.pdf.
[22] PG&E. Delivering Low-emission Energy. Accessed October 31, 2016. https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page.
[23] CEC. Energy Consumption Data Management System. Electricity Consumption by County. Accessed December 7, 2016. http://ecdms.energy.ca.gov/elecbycounty.aspx.
[24] CEC. Natural Gas Supply by Region. Accessed December 7, 2016. http://www.energyalmanac.ca.gov/naturalgas/natural_gas_supply.html.
[25] EIA. Natural Gas Summary. Accessed December 7, 2016. http://www.eia.gov/dnav/ng/ng_sum_lsum_dcu_SCA_a.htm.
[26] EIA. Natural Gas Conversion Calculator. Accessed December 7, 2016. https://www.eia.gov/kids/energy.cfm?page=about_energy_conversion_calculator-basics#natgascalc.
[27] CEC. Natural Gas Consumption by County. Santa Clara County 2015 Data. Accessed December 7, 2016. http://ecdms.energy.ca.gov/gasbycounty.aspx.
[28] CEC. *Electricity and Natural Gas Demand Forecast*. Accessed December 8, 2016. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN206501_20151103T100153_Draft_Staff_Report_2015_Natural_Gas_Outlook.pdf.

Gasoline for Motor Vehicles

California accounts for more than one-tenth of the United States' crude oil production and petroleum refining capacity.[29] In 2015, over 140 billion gallons of gasoline, diesel, and jet fuel were consumed in the United States and over 14 billion gallons of gasoline were consumed in California.[30,31] The United States has seen low prices and high demand in the last few years due to low oil prices and a recovering economy, and this trend is expected to continue in the near term.[32]

The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 13.1 miles-per-gallon (mpg) in the mid-1970s to 23.2 mpg in 2014.[33] Federal fuel economy standards have changed substantially since the Energy Independence and Security Act was passed in 2007. That standard, which originally mandated a national fuel economy standard of 35 mpg by the year 2020, applies to cars and light trucks of Model Years 2011 through 2020. [34,35] In 2012, the federal government raised the fuel economy standard to 54.5 mpg for cars and light-duty trucks by Model Year 2025.[36]

3.5.2 Energy Impacts

3.5.2.1 *Thresholds of Significance*

Based on Appendix F of the CEQA Guidelines, and for the purposes of this EIR, a project will result in a significant energy impact if the project will:

- Use fuel or energy in a wasteful manner; or
- Result in a substantial increase in demand upon energy resources in relation to projected supplies.

3.5.2.2 *Energy Use of the Proposed Project*

Energy would be consumed during both the construction and operational phases of the proposed project. The construction phase would require energy for the manufacture and transportation of building materials, preparation of the site (e.g., demolition and grading), and the actual construction of the buildings. Petroleum-based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks. The operation of the proposed commercial uses would consume energy (in the form of electricity and natural gas) primarily for building heating and cooling, lighting, and water heating. For the purposes of this analysis, the energy use of the existing uses on site (two

---

[29] EIA. California State Energy Profile. Accessed December 7, 2016. http://www.eia.gov/beta/state/analysis.cfm?sid=CA.
[30] EIA. Frequently Asked Questions. Accessed December 7, 2016. https://www.eia.gov/tools/faqs/faq.cfm?id=23&t=10.
[31] California State Board of Equalization. Taxable Gasoline, Diesel Fuel, Jet Fuel Ten Year Reports. Accessed December 7, 2016. http://www.boe.ca.gov/sptaxprog/spftrpts.htm.
[32] EIA. Short-Term Energy and Fuels Outlook. Accessed December 7, 2016. http://www.eia.gov/forecasts/steo/report/us_oil.cfm.
[33] EPA. Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles. Accessed December 7, 2016. http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_04_23.html.
[34] U.S. Department of Energy. Energy Independence & Security Act of 2007. Accessed December 7, 2016. http://www.afdc.energy.gov/laws/eisa.
[35] Public Law 110–140—December 19, 2007. Energy Independence & Security Act of 2007. Page 1449. Accessed December 7, 2016. http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf.
[36] National Highway Traffic Safety Administration. *Obama Administration Finalizes Historic 54.5 mpg Fuel Efficiency Standards*. Accessed December 7, 2016. http://www.nhtsa.gov/About+NHTSA/Press+Releases/2012/Obama+Administration+Finalizes+Historic+54.5+mpg+Fuel+Efficiency+Standards.

single-family residences, several accessory structures, and fallow farmlands) is not subtracted from the operational energy use estimates for the proposed project. Additionally, the energy use increase is likely overstated because the estimates for energy use do not take into account the required Green Building Ordinance energy efficiency measures associated with LEED-Silver requirements.

The project includes two development options. Option 1 proposes approximately 1.2 million square feet of light industrial development. Option 2 proposes a 436,880 square foot data center and approximately 728,000 square feet of light industrial development. Energy would be consumed at the site in the form of diesel fuel for emergency generators and electricity and natural gas for building heating cooling, and other operational functions.

Energy use for both options is summarized in Table 3.5-1. As show in the table, the data center/light industrial development would use substantially more electricity on an annual basis (for the cooling needs of the data center), and the light industrial development would use more gasoline (as a result of more on-site employees driving to the facility). The higher natural gas usage for the light industrial development is related to the greater amount of climate controlled office space for on-site employees.

Table 3.5-1: Estimated Annual Energy Use of Proposed Project

Development Options	Electricity (kWh)	Natural Gas (kBtu)	Emergency Generator Diesel Fuel (gallons)	Gasoline (gallons)
Light-Industrial Development	11,026,592	31,776,000	240	794,956
Data Center/Light Industrial Development	378,977,968	26,464,080	240	531,151

Source: Illingworth & Rodkin. *237 Industrial Center San José, California Air Quality Assessment.* November 16, 2016.

Electricity Demand

As described previously, the annual 282,896 GWh electricity demand in California is projected to increase by approximately one percent each year through 2025 (despite 2015's decrease in overall demand from 2014). The proposed project would increase annual electricity use at the site by either 11,026,592 kWh (approximately 11 GWh) for the light industrial development, or 378,977,968 kWh (approximately 379 GWh) for the data center/light industrial development. The light-industrial development represents a 0.004 percent increase in overall state-wide electricity demand and the data center/light industrial development represents a 0.1 percent increase in demand. Given these small percentage increases, neither development option would result in a substantial increase in demand on electrical energy resources in relation to projected supply. Thus, while the demand for energy would increase, the impact is less than significant.

Natural Gas Demand

California uses approximately 2.4 quadrillion Btu of natural gas each year. As described previously, it is assumed that energy efficiency technology and the RPS targets are likely to reduce demand for natural gas in the state in the future. Additionally, system and drilling efficiencies will continue to enhance production and decrease the overall need for natural gas.[37] Based on the relatively small increase in natural gas demand from the project for either the light industrial development (31,776,000 kBtu) or the data center/light industrial development (26,464,080 kBtu) and compared to the growth trends in natural gas supply and the existing available supply in California, the proposed project would not result in a substantial increase in natural gas demand relative to projected supplies.[38]

Diesel and Gasoline Demand

The 240 gallon increase in demand for diesel fuel for the emergency generator at the project site would not significantly impact state or local diesel supplies, especially given the assumed sporadic use of the equipment.

The light industrial development would generate a total vehicle miles traveled (VMT) of 18,442,969 annually, and the data center light industrial development would generate a VMT of 12,322,704 annually.[39] The estimated gallons of gasoline that would be consumed with each development option is shown in Table 3.5-1. The estimates are based on EPA average fuel economy estimates for 2014, which is 23.2 mpg for a passenger car.[40,41] Though this increase is sizable when compared to the gasoline use associated with the limited scale of the existing development at the site, it would not be a substantial increase in the context of gasoline supply and demand in the City of San José and State of California.

New automobiles purchased by future occupants of the proposed project would be subject to fuel economy and efficiency standards applied throughout the State of California, which means that over time the fuel efficiency of vehicles associated with the project site would improve. Additionally, ongoing increases in the fuel economy standards for new vehicles would result in efficiency gains for vehicles overtime. While the project would increase the VMT associated with the project site compared to the existing condition, this increase is not significant when viewed with regard to the citywide or area-wide VMT. Additionally, the VMT-associated gasoline demand increase is not significant in terms of increasing demand above supply. **(Less than Significant Impact)**

3.5.2.3 *Energy Efficiency*

Construction

The anticipated construction schedule assumes that the light industrial development would be constructed over one year and the data center/light industrial development would take several years to complete. The project would require demolition, grading, and site preparation for construction of the proposed buildings. Based on data provided by the applicant, the proposed project would require importing up to 124,000 cubic yards.

---

37 CEC. *Electricity and Natural Gas Demand Forecast*. Accessed December 7, 2016. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN206501_20151103T100153_Draft_Staff_Report_2015_Natural_Gas_Outlook.pdf.

38 Both Option 1 and Option 2 would result in less than 0.000000001 percent increase in statewide natural gas demand.

39 Illingworth & Rodkin. *237 Industrial Center San Jose, California Air Quality Assessment.* November 16, 2016.

40 Option 1: 18,442,969/23.2 mpg = 794,956 gallons of gasoline. Option 2: 12,322,704/23.2 mpg = 531,151 gallons of gasoline.

41 Association of Bay Area Governments. *Plan Bay Area*. Table 2.1-5. Accessed April 18, 2016. http://planbayarea.org/pdf/Draft_EIR_Chapters/2.1_Transportation.pdf 10,529.

The overall construction schedule and process is already designed to be efficient in order to avoid excess monetary costs. That is, equipment and fuel are not typically used wastefully on the site because of the added expense associated with renting the equipment, maintaining it, and fueling it. Therefore, the opportunities for future efficiency gains during construction are limited. The proposed project, however, does include several measures that would improve the efficiency of the construction process. Implementation of the BAAQMD BMPs detailed in Section 3.2 *Air Quality* would restrict equipment idling times to five minutes or less and would require the applicant to post signs on the project site reminding workers to shut off idle equipment. The project would also recycle or salvage at least 30 percent of construction waste as part of its LEED certification.

There would be unavoidable adverse effects caused by construction of the project because of the use of fuels and building materials; however, implementation of the air quality-related BMPs would reduce the energy impacts of construction and unavoidable effects of development to a less than significant level.

Operation

The proposed project would be required to build to the state's CalGreen code, which includes insulation and design provisions to minimize wasteful energy consumption. Though the proposed project does not include on-site renewable energy resources, the proposed mixed-use development would be built to achieve LEED Silver certification consistent with San José's Council Policy 6-32.

The proposed project would be required to include up to 240 bicycle parking spaces. The inclusion of bicycle parking, on-site showers in the office buildings, and other TDMs as described in mitigation measure AQ-1.4 (refer to *Section 3.2 Air Quality)* would incentivize the use of alternative methods of transportation to and from the site. In addition, at least 50 percent of the hardscape surfaces on the site would have a solar reflectance index (SRI) of 29 or more as required for LEED certification.

By including pavement that is more reflective than traditional blacktop surfaces, the project would reduce the heat generated locally by hardscape (known as the heat island effect) and, by extension, incrementally reduce the use of air conditioning in the new building. Based on the measures required for LEED Certification, the proposed project would comply with existing state energy standards. By reducing single-occupancy traffic trips and including green-building measures to achieve LEED certification, the proposed project would comply with existing state energy standards and would not use fuel or energy in a wasteful manner.

Power Usage Effectiveness during Data Center Operation

Power Usage Effectiveness, or PUE, is a metric used to compare the efficiency of facilities that house computer servers. PUE is defined as the ratio of total facility energy use to Information Technology (IT) (i.e., server) power draw (e.g., PUE = Total Facility Source Energy/ IT Source Energy). For example a PUE of two (2), means that the data center or laboratory must draw two (2) watts of electricity for every one (1) watt of power consumed by the IT/server equipment. It is equal to the total energy consumption of a data center (for all fuels) divided by the energy consumption used for the IT equipment. The ideal PUE is one (1) where all power drawn by the facility goes to the IT infrastructure.

With implementation of the proposed mechanical and electrical design of the building and the anticipated data center occupancy, the PUE of the data center would be no more than 1.2. **(Less Than Significant Impact)**

3.5.2.4 *Distance Between Jobs and Housing*

The project is a light industrial development that would result in additional jobs in a city that currently has a higher number of employed residents than jobs (approximately 0.8 jobs per employed resident). The implications of this imbalance are that many residents leave San José five times per week to commute to and from work, typically by personal vehicle. The proposed project would incrementally reduce the imbalance between jobs and employed residents; though, it is assumed that the light-industrial development would provide substantially more jobs than the data center/light industrial development. Therefore, the project would not increase the distance between jobs and housing; rather, the proposed project would incrementally decrease the imbalance between jobs and employed residents in the City of San José.

In addition, the project would include up to 240 bicycle parking spaces per City code (22 spaces are being provided by the data center in Option 2) and the site is in proximity to multiple transit routes, which would help to reduce vehicle trips to and from the project site. Ongoing increases in the fuel economy standards for new vehicles would result in efficiency gains for vehicles overtime. Therefore, although the project would increase the VMT associated with the project site compared to the existing condition, the project would not result in significant energy impacts and would not substantially increase the distance between jobs and housing. **(Less than Significant Impact)**

3.5.3 Mitigation and Avoidance Measures

No mitigation is required or proposed.

3.5.4 Conclusion

The project would not result in significant energy impacts associated with the distance between jobs and housing and, due to the inclusion of green building design features, the project would not result in the wasteful use of fuel or energy. The project would not result in a substantial increase in demand upon energy resources in relation to projected supplies. **(Less Than Significant Impact)**

3.6 GEOLOGY AND SOILS/MINERAL RESOURCES

The following discussion is based in part, on a Geotechnical Investigation Report prepared by *Kleinfelder, Inc.* in June 2016. A copy of the report is attached to this Environmental Impact Report as Appendix H.

3.6.1 <u>Environmental Setting</u>

3.6.1.1 *Regulatory Framework*

Development within the City of San José is subject to various federal, state, and local regulations aimed at reducing potential impacts of geologic and seismic hazards to people, property, and the environment. As described in Section 4.9 *Hydrology and Water Quality*, erosion control is regulated by the Federal Clean Water Act, State of California Porter Cologne Water Quality Act, the National Pollutant Discharge Elimination System (NPDES), and City policies 6-29 and 8-14.

The California Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. Local agencies must regulate the construction of buildings used for human occupancy in these zones.

The California Building Code (in Title 24, California Code of Regulations) serves as the basis for the design and construction of buildings in the state. Currently, the 2013 California Building Code contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, the strength of the ground, and distance to seismic resources.

City of San José Municipal Code

Title 24 of the San José Municipal Code includes the 2013 California Building, Plumbing, Mechanical, Electrical, Existing Building, Historical Building, and Green Building Codes. Requirements for building safety and earthquake hazard reduction are also addressed in Chapter 17.40 (Dangerous Buildings) and Chapter 17.10 (Geologic Hazards Regulations) of the Municipal Code. Requirements for grading, excavation, and erosion control are included in Chapter 17.04 (Building Code, Part 6 Excavation and Grading). In accordance with the Municipal Code, the Director of Public Works must issue a Certificate of Geologic Hazard Clearance prior to the issuance of grading and building permits within defined geologic hazard zones.

Envision San José 2040 General Plan

The Envision San José 2040 General Plan includes the following policies applicable to all development projects in San José.

Policy EC-3.1: Design all new or remodeled habitable structures in accordance with the most recent California Building Code and California Fire Code as amended locally and adopted by the City of San José, including provisions regarding lateral forces.

Policy EC-3.2: Within seismic hazard zones identified under the Alquist-Priolo Fault Zoning Act, California Seismic Hazards Mapping Act and/or by the City of San José, complete geotechnical and geological investigations and approve development proposals only when the severity of seismic hazards have been evaluated and appropriate mitigation measures are provided as reviewed and approved by the City of San José Geologist. State guidelines for evaluating and mitigating seismic hazards and the City-adopted California Building Code will be followed.

Policy EC-4.1: Design and build all new or remodeled habitable structures in accordance with the most recent California Building Code and municipal code requirements as amended and adopted by the City of San José, including provisions for expansive soil, and grading and storm water controls.

Policy EC-4.2: Approve development in areas subject to soils and geologic hazards, including un-engineered fill and weak soils and landslide-prone areas, only when the severity of hazards have been evaluated and if shown to be required, appropriate mitigation measures are provided. New development proposed within areas of geologic hazards shall not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties. The City of San José Geologist will review and approve geotechnical and geological investigation reports for projects within these areas as part of the project approval process.

Policy EC-4.4: Require all new development to conform to the City of San José's Geologic Hazard Ordinance.

Policy EC-4.5: Ensure that any development activity that requires grading does not impact adjacent properties, local creeks and storm drainage systems by designing and building the site to drain properly and minimize erosion. An Erosion Control Plan is required for all private development projects that have soil disturbance of one acre or more, are adjacent to a creek/river, and/or are located in hillside areas. Erosion Control Plans are also required for any grading occurring between October 15 and April 15.

Policy EC-4.7: Consistent with the San José Geologic Hazard Ordinance, prepare geotechnical and geological investigation reports for projects in areas of known concern to address the implications of irrigated landscaping to slope stability and to determine if hazards can be adequately mitigated.

Policy ES-4.9: Permit development only in those areas where potential danger to health, safety, and welfare of the persons in that area can be mitigated to an acceptable level.

3.6.1.2 *Existing Conditions*

Regional Geology

The project site is located in the Santa Clara Valley, an alluvial basin, bounded by the Santa Cruz Mountains to the west, the Hamilton/Diablo Range to the east, and the San Francisco Bay to the north. The Santa Clara Valley was formed when sediments derived from the Santa Cruz Mountains and the Hamilton/Diablo Range were exposed by the continued tectonic uplift and regression of the inland sea that had previously inundated the area. Sediments of the Santa Clara Valley are composed of water-bearing Plio-Pleistocene and Upper Quaternary sediments, which are underlain by older non-water bearing rocks. The Upper Quaternary sediments consist of up to 1,000 feet of poorly sorted gravel, sand and clay, which were deposited in alluvial fan and deltaic depositional environments.

Site Geology

Soils

The project site is approximately 20 feet above mean sea level and gently slopes down to the north at zero to two percent declines. The site is underlain by soils of the Campbell silt loam complex (approximately 16.2 percent) and Elder fine sandy loam soils (approximately 63.2 percent). These soils are composed of undifferentiated deposits of alluvium and marine deposits ("Bay Muds"). The soils in the upper three to five feet of the site are predominately granular soils consisting of clayey sands, sands and gravels with variable clay content, and some sandy clays. Below these soils to depths of approximately 20 to 25 feet bgs, soils on-site are lean to fat clays which are underlain by interbedded loose to medium dense gravels with sand, loose to medium dense sands with gravel, and low to medium plasticity sandy lean clays to a depth of approximately 80 feet bgs.

Soils of the Campbell silt loam complex exhibit low shrink-swell potential (i.e., expansive behavior) within approximately the first two feet of ground surface and exhibit high to very-high shrink-swell potential beyond two feet of the ground surface. Soils of the Elder fine sandy loam soils exhibit low shrink-swell potential. Expansive soils shrink and swell as a result of moisture changes. These changes can cause heaving and cracking of slabs-on-grade, pavement, and structures found on shallow foundations. There are no unique geologic features on or adjacent to the project site. Due to the flat topography of the project site, the potential for erosion or landslide on or adjacent to the site is low.

Groundwater

Depth to shallow groundwater has historically been encountered at approximately five feet below ground surface.[42]

Seismicity

The San Francisco Bay Area is classified as the most seismically active region in the United States. The significant earthquakes that occur in the Bay Area are generally associated with crustal movement along well defined active fault zones of the San Andreas Fault System, which regionally trends in a northwesterly direction. The U.S. Geological Survey's Working Group on California Earthquake Probabilities 2007 estimates that there is a 63 percent chance of at least one magnitude 6.7 earthquake occurring in the Bay Area between 2007 and 2036. The Hayward Fault is the most likely to generate an earthquake of this magnitude in the next 30 years.

The project site is not located within a State-designated Alquist-Priolo Earthquake Fault Zone and no active faults have been mapped on-site. Therefore, the risk of fault rupture at the site is low. Faults in the region are, however, capable of generating earthquakes of magnitude 7.0 or higher and strong to very strong ground shaking would be expected to occur at the project site during a major earthquake on one of the nearby faults.

The nearest faults to the project site are the Hayward fault (located approximately 4.5 miles to the northeast), the Crosley fault (located approximately 3 miles to the northeast), the Calaveras fault

[42] *Kleinfelder, Inc.* Geotechnical Study Results PACLAND Project 1926. June 10, 2016.

(located approximately 8 miles to the east), and the San Andreas fault (located approximately 14.5 miles to the southwest).

Liquefaction

Liquefaction is the result of seismic activity and is characterized as the transformation of loose water-saturated soils from a solid state to a liquid state during ground shaking. Soils most susceptible to liquefaction are loose, non-cohesive soils that are saturated and are bedded with poor drainage, such as sand and silt layers bedded with a cohesive cap. Historic groundwater beneath the project site is potentially as shallow as five feet below the existing ground surface and soils beneath the project site were found to be highly susceptible to liquefaction. According to the Santa Clara County Geologic Hazard Zones Map, the project site is located in a potential liquefaction zone.[43]

Lateral Spreading

Lateral spreading is a type of ground failure related to liquefaction. It consists of the horizontal displacement of flat-lying alluvial material toward an open area, such as the steep bank of a stream channel. The project site is relatively flat and is bordered by Coyote Creek to the east. Based on the findings of the Geotechnical Investigation by *Kleinfelder, Inc.,* the east and northeast areas of the project site have a low potential for lateral spreading and the southeast area adjacent to the creek has a high potential for lateral spreading.

The Santa Clara Valley Water District (SCVWD) owns the existing levees along the west bank of Coyote Creek, adjacent to the subject property. The US Army Corp of Engineers and SCVWD identify the levees location as within Reach 2B of the Coyote Creek levee system. The Coyote Creek levees adjacent to the project site are listed as "minimally acceptable"[44] according to the National Levee Database (USACE, 2016) based on an inspection conducted in August, 2011. Levees adjacent to the project site are approximately eight feet above ground.

Mineral Resources

Mineral resources are known to exist in and near the Santa Clara Valley and include cement, sand, gravel, crushed rock, clay, and limestone. Santa Clara County has also supplied a significant portion of the nation's mercury over the past century. Pursuant to the mandate of the Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board has designated the Communications Hill Area, bounded generally by the Union Pacific Railroad, Curtner Avenue, State Route 87, and Hillsdale Avenue as a source of construction aggregate materials.

Neither the State Geologist nor the State Mining and Geology Board has classified any other areas in San José as containing mineral deposits which are either of statewide significance or the significance of which requires further evaluation. Therefore, other than the Communications Hill area cited

---

[43] Santa Clara County. *Santa Clara County Geologic Hazard Zones, Map 3.* <https://www.sccgov.org/sites/dpd/DocsForms/Documents/GEO_GeohazardATLAS.pdf> Accessed May 19, 2017.

[44] *Minimally Acceptable* is used when "one or more inspection items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable inspection items would not prevent the segment/system from performing as intended during the next flood event". Available at: http://www.usace.army.mil/Missions/Civil-Works/Levee-Safety-Program/Levee-Inspections/. Accessed on December 8, 2016.

above, San José does not have mineral deposits subject to SMARA. Communications Hill is approximately 14.8 miles south of the project site.

3.6.2 Geology and Soils Impacts

3.6.2.1 *Thresholds of Significance*

For the purposes of this EIR, a geology and soils impact is considered significant if the project would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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);
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; or
  - Landslides.
- Result in substantial soil erosion or the loss of topsoil; or
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property;
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water;
- Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state; or
- Result in the loss of availability of locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

3.6.2.2 *Consistency with Plans*

The proposed project would be required to be built in conformance with a site specific geotechnical report and the most recent California Building Code standards to address all geological and seismic related issues on the project site. In addition, as a condition of approval, the project would be required to implement erosion control measures during construction to avoid loss of topsoil and pollution of local waterways. Therefore, the project would be consistent with General Plan Policies EC-3.1, EC-3.2, EC-4.1, EC-4.2, EC-4.4, EC-4.5, EC-4.7, and EC-4.9.

3.6.2.3 *Geologic Impacts from the Project*

The project site is in the seismically active San Francisco Bay Area which has a 63 percent probability of experiencing at least one magnitude 6.7 earthquake during the next 30 years. Earthquake faults in the region, specifically the San Andreas, Hayward, and Calaveras faults, are capable of generating earthquakes larger than 7.0 in magnitude. The project site would experience intense ground shaking in the event of a large earthquake. As described previously, the project site and surrounding areas are, however, relatively flat. As a result, development of the project site would not expose adjacent or nearby properties to landslide related hazards. **(Less Than Significant Impact)**

As described previously, the likelihood of liquefaction occurrence in the east and northeast area of the project site is insignificant. The southeast area of the project site was identified as having a significant likelihood of liquefaction. The potential for lateral spreading is low in the east and northeast areas of the site, and high in the southeast area along the creek. A design-level geotechnical investigation will be required for the proposed development, consistent with General Plan policies, that identifies site-specific ground failure hazards such as liquefaction and lateral spreading and appropriate techniques to minimize risks to people and structures.

Over-excavation and re-compaction is a commonly used method to mitigate soil conditions susceptible to settlement. In addition, the project shall be designed and constructed in accordance with the California Building Code. Adherence to the California Building Code would ensure the project resists minor earthquakes without damage and major earthquakes without collapse and would not exacerbate existing geologic conditions on adjacent sites. **(Less Than Significant Impact)**

The project site is located in an area of very strong ground shaking during an earthquake. Based on the findings of the Geotechnical Investigation by *Kleinfelder, Inc.* it is recommended that the project undergo additional supplementary laboratory testing of the subgrade soils after the completion of rough grading operations to evaluate the expansion potential of the exposed subgrade soils as part of the project's permit condition identified below.

Permit Condition

- Prior to the issuance of a grading permit, the site-specific geotechnical investigation shall be submitted to the Director of Public Works for approval.

- Recommendations from the approved geotechnical investigation shall be implemented including, supplementary laboratory testing.

The supplementary testing would confirm or modify the recommendations of the geotechnical report prepared for this project. With compliance with the identified permit conditions, future development of the project site would not change or exacerbate the geologic conditions of the project area and would not result in a significant geology hazards impact. **(Less Than Significant Impact)**

The proposed project would require the extension of sanitary sewer lines to the site from those located within Zanker Road. Therefore, the site will not need to support septic tanks or alternative wastewater disposal systems. **(No Impact)**

3.6.2.4 *Construction Impacts*

The site is currently undeveloped with the majority of the site's soils exposed. The project would require site grading to include fill placement to raise the current side grade by approximately three to five feet. Ground disturbance to soils on-site would increase the potential for wind or water related erosion and sedimentation at the site until construction is complete.

The City's NPDES Municipal Permit, urban runoff policies, and the Municipal Code are the primary means of enforcing erosion control measures through the grading and building permit process. The General Plan FPEIR concluded that with the regulatory programs currently in place, the possible impacts of accelerated erosion during construction would be less than significant. The City shall require all phases of the project to comply with all applicable City regulatory programs pertaining to construction related erosion as a condition of project approval, including but not limited to the following permit conditions:

Permit Conditions:

- All excavation and grading work will be scheduled in dry weather months or construction sites will be weatherized.
- Stockpiles and excavated soils will be covered with secured tarps or plastic sheeting.
- Ditches will be installed, if necessary, to divert runoff around excavations and graded areas.

Because the project would comply with the regulations identified in the General Plan FPEIR and all applicable City regulatory programs pertaining to construction related erosion including the identified permit conditions, implementation of the proposed project would have a less than significant soil erosion impact. **(Less Than Significant Impact)**

3.6.2.5 *Mineral Resources*

The project site is not located in an area designated as containing regionally or locally significant mineral resources. **(No Impact)**

3.6.2.6 *Existing Geologic Conditions Affecting the Project Site*

The California Supreme Court in a December 2015 opinion (*BIA v. BAAQMD*) confirmed CEQA is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project; nevertheless, the City has policies that address existing conditions (e.g. geologic hazards) affecting a proposed project, which are addressed below.

The policies of the City of San José 2040 General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. The City of San José General Plan Policy EC-4.2 states that development is allowed in areas subject to soils and geologic hazards, including unengineered fill and weak soils and landslide-prone areas, only when the severity of hazards have been evaluated and if shown to be required, appropriate mitigation measures are provided. New development proposed within areas of geologic hazards shall not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties. To ensure this, the policy requires the City of San José Geologist to review and approve geotechnical and geological investigation reports for projects within these areas as part of the project approval process. In addition, Policy EC-4.4 requires all new development to conform to the City of San José's Geologic Hazard Ordinance. To ensure that proposed development sites are suitable, Action EC-4.11 requires the preparation of geotechnical and geological investigation reports for projects within areas subject to soils and geologic hazards, and require review and implementation of mitigation measures as part of the project approval process.

Given the project site's adjacency to Coyote Creek, future development of the project site may experience lateral spreading during seismic events. A design-level geotechnical investigation will be prepared for the proposed development that identifies site-specific ground failure hazards such as liquefaction and lateral spreading and appropriate techniques to minimize risks to people and structures. Over-excavation and re-compaction is a commonly used method to mitigate soil conditions susceptible to settlement. In addition, the project shall be designed and constructed in conformance with the requirements of the California Building Code. The General Plan FPEIR concluded that adherence to the California Building Code would reduce seismic related impacts to a less than significant level. The project would be built and maintained in accordance with a site-specific geotechnical report and applicable regulations including the California Building Code.

As discussed in Section 3.6.2.3, the project site is in the seismically active San Francisco Bay Area which has a 63 percent probability of experiencing at least one magnitude 6.7 earthquake during the next 30 years. Earthquake faults in the region, specifically the San Andreas, Hayward, and Calaveras faults, are capable of generating earthquakes larger than 7.0 in magnitude. The project site would experience intense ground shaking in the event of a large earthquake.

Geologic conditions in the project area will require that the proposed structures be designed and built in conformance with the requirements of the California Building Code. The General Plan FPEIR concluded that adherence to the California Building Code would reduce seismic related impacts to a less than significant level. The project would be built and maintained in accordance with a design-level site-specific geotechnical report and applicable regulations including the California Building Code.

Because the proposed project would comply with the design-specific geotechnical report, the California Building Code, and regulations identified in the General Plan FPEIR that ensure geologic hazards are adequately addressed, the project would comply with Policies EC-4.2 and EC-4.4.

3.6.3 Mitigation and Avoidance Measures

Mitigation is not required or proposed.

3.6.4 Conclusion

Adherence to all existing building codes, regulations, and policies, including the California Building Code and those in the General Plan will ensure construction of the proposed project will have a less than significant geologic and soils impact. **(Less Than Significant Impact)**

3.7 GREENHOUSE GAS EMISSIONS

In accordance with CEQA Section 21093 and CEQA Guidelines Section 15152, the following impacts analysis tiers from the certified 2015 *Envision San José 2040 Final Supplemental Program Environmental Impact Report* (PEIR) (SCH#2003042127). Updated information reflecting changes to the regulatory setting is also incorporated in the discussion.

3.7.1 Environmental Setting

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of Greenhouse Gases (GHGs) have a broader, global impact. Global warming associated with the "greenhouse effect" is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global warming and associated climate change are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial and manufacturing, utility, residential, commercial, and agricultural sectors.

3.7.1.1 *Regulatory Framework*

California Assembly Bill 32 and Executive Orders

Assembly Bill 32 (AB 32), also known as the Global Warming Solutions Act, was passed in 2006 and established a goal to reduce GHG emissions to 1990 levels by 2020. Prior to the adoption of AB 32, the Governor of California also signed Executive Order S-3-05 into law, which set a long term objective to reduce GHG emissions to 80 percent below 1990 levels by 2050. The California Environmental Protection Agency (CalEPA) is the state agency in charge of coordinating the GHG emissions reduction effort and establishing targets along the way.

In December 2008, CARB approved the *Climate Change Scoping Plan*, which proposes a comprehensive set of actions designed to reduce California's dependence on oil, diversify energy sources, save energy, and enhance public health, among other goals. Per AB 32, the *Climate Change Scoping Plan*, must be updated every five years to evaluate the mix of AB 32 policies to ensure that California is on track to achieve the 2020 GHG reduction goal. The First Update to the *Climate Change Scoping Plan*, was approved on May 22, 2014 and builds upon the previous plan with new strategies and recommendations. The First Update defines CARB's priorities over the next five years and lays the groundwork to reach long-term goals set forth in Executive Order S-3-05.[45]

Executive Order B-30-15

On April 29, 2015, Governor Brown issued Executive Order B-30-15 establishing a GHG reduction target for California of 40 percent below 1990 levels by 2030. This is considered a mid-term target for implementation of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050. State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets.

[45] California Environmental Protection Agency. Air Resources Board. *First Update to the AB 32 Scoping Plan*. Accessed May 26, 2016. Available here: <http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>

As discussed in the following subsection, a second update to the Climate Change Scoping Plan has been released in draft form and will be considered for adoption by CARB in June 2017. It specifically addresses the 2030 mid-term target established under SB 32 and identifies local actions as well as State of California actions and programs to reduce GHG emissions.

SB 32 and AB 197

SB 32 and AB 197 were signed into law in September 2016. SB 32 legislation amends provisions of AB 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code Division 25.5), to require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by December 31, 2030. This legislation incorporates the Executive Order B-30-15 target discussed above into state law. Changes to the California Health and Safety Code under the companion AB 197 legislation call for each scoping plan update to identify emissions reduction measures and include the range of projected GHG emissions reductions as well as the range of projected air pollution reductions that result from the emission reduction measures.

The mid-term target established under SB 32 is considered critical by the state to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing GHG emissions. CARB is charged with adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions to meet the new interim statewide GHG target. The framework for GHG emissions reductions will be provided through an update to the current Climate Change Scoping Plan. The estimated timeline for development and approval of the *2030 Target Scoping Plan* includes release of a draft for public comment in January 2017 and consideration by CARB in June of 2017.[46]

Other Implementing Laws and Regulations

There are a number laws that have been adopted as a part of the State of California's efforts to reduce GHG emissions and their contribution to climate change. State laws and regulations related to growth, development, planning and municipal operations in San José include, but are not limited to:

- California Mandatory Commercial Recycling Law (AB 341)
- California Water Conservation in Landscaping Act of 2006 (AB 1881)
- California Water Conservation Act of 2009 (SBX7-7)
- Various Diesel-Fuel Vehicle Idling regulations in Chapter 13 of the California Code of Regulations
- Building Energy Efficiency Standards (Title 24, Part 6)
- California Green Building Code (Title 24, Part 11)
- Appliance Energy Efficiency Standards (Title 20)

Implementation of the policies in the *Envision San José 2040 General Plan* as a part of the City's development permitting and other programs provides for meeting building standards for energy

[46]CARB. *Discussion Draft 2030 Target Scoping Plan, December 2, 2016*. Accessed December 2, 2016. Available at: https://www.arb.ca.gov/cc/scopingplan/2030target_sp_dd120216.pdf .

efficiency, recycling, and water conservation, consistent with the laws and regulations designed to reduce GHG emissions.

Senate Bill 375

Senate Bill 375

Senate Bill 375 (SB 375), known as the Sustainable Communities Strategy and Climate Protection Act, was signed into law in September 2008. It builds on AB 32 by requiring CARB to develop regional GHG reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035 in comparison to 2005 emissions. The per capita GHG reduction targets for passenger vehicles in the San Francisco Bay Area include a seven percent reduction by 2020 and a 15 percent reduction by 2035.[47] The four major requirements of SB 375 are:

- Metropolitan Planning Organizations (MPOs) must meet GHG emission reduction targets for automobiles and light trucks through land use and transportation strategies.
- MPOs must create a Sustainable Communities Strategy (SCS), to provide an integrated land use/transportation plan for meeting regional targets, consistent with the Regional Transportation Plan.
- Regional housing elements and transportation plans must be synchronized on eight-year schedules, with Regional Housing Needs Assessment allocation numbers conforming to the SCS.
- MPOs must use transportation and air emissions modeling techniques consistent with guidelines prepared by the California Transportation Commission.

The Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) adopted *Plan Bay Area* in July 2013, and the updated *2040 Plan Bay Area* was released in draft form on April 3, 2017. The strategies in the plan are intended to promote compact, mixed-use development close to public transit, jobs, schools, shopping, parks, recreation, and other amenities, particularly within Priority Development Areas (PDAs) identified by local jurisdictions. PDAs are areas where new development would support the day-to-day needs of residents and workers in a pedestrian-friendly environment served by transit. The project site is not within a designated PDA.[48]

Renewables Portfolio Standard for Energy Generation

California's Renewables Portfolio Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires electric corporations to increase procurement from eligible renewable energy resources and meet established milestones. Under SB X1-2, all electricity suppliers must achieve the criterion that 33 percent of electric generation come from renewable sources by the end of 2020. These requirements apply to all electricity retailers in the state – investor-owned utilities, municipal utilities and independent sellers. The California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) jointly implement the RPS program. To the extent that several types of renewable energy sources (e.g., hydropower, wind

[47] The emission reduction targets are for those associated with land use and transportation strategies only. Emission reductions due to the California Low Carbon Fuel Standards or Pavley emission control standards are not included.
[48] One Bay Area. *Future Place Type for Priority Development Areas in Santa Clara County*. Accessed May 10, 2017. <http://www.sanjoseca.gov/DocumentCenter/View/735>.

and solar) have limited GHG emissions from power generation compared to energy generated through combustion processes, implementation of this standard would reduce GHG emissions from electric power generation.

Regional and Local Plans

2017 Bay Area Clean Air Plan

BAAQMD and other agencies prepare clean air plans as required under the state and federal Clean Air Acts. The 2017 CAP, entitled *Spare the Air/Cool the Climate*, is a blueprint for BAAQMD's efforts to reduce air pollution and protect public health and the global climate. Consistent with the GHG reduction targets adopted by the state of California, the 2017 CAP lays the groundwork for the BAAQMD's long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

BAAQMD CEQA Guidelines

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 Air Quality Guidelines. The BAAQMD CEQA Guidelines also outline a methodology for estimating GHG emissions. In jurisdictions where a qualified GHG Reduction Strategy has been reviewed under CEQA and adopted by decision-makers, compliance with the GHG Reduction Strategy would reduce a project's contribution to cumulative GHG emission impacts to a less than significant level. The BAAQMD CEQA Guidelines also outline a methodology for estimating GHG emissions.

City of San José Municipal Code

The City's Municipal Code includes the following regulations that would reduce GHG emissions from future development:

- Green Building Regulations for Private Development (Chapter 17.84)
- Water Efficient Landscape Standards for New and Rehabilitated Landscaping (Chapter 15.10)
- Transportation Demand Programs for employers with more than 100 employees (Chapter 11.105)
- Construction and Demolition Diversion Deposit Program (Chapter 9.10)
- Wood Burning Ordinance (Chapter 9.10)

City of San José Private Sector Green Building Policy (6-32)

In October 2008, the City adopted the Private Sector Green Building Policy (6-32) that establishes baseline green building standards for private sector new construction and provides a framework for the implementation of these standards. This policy requires that applicable projects achieve minimum green building performance levels using the Council adopted standards. The proposed project would be subject to this policy. Since the proposed industrial project would be greater than

25,000 square feet, the proposed data center buildings would be required to achieve LEED Silver certification, at minimum.[49]

Envision San José 2040 General Plan

The General Plan includes strategies, policies, and action items that are incorporated in the City's GHG Reduction Strategy to help reduce GHG emissions. Multiple policies and actions in the General Plan have GHG implications, including land use, housing, transportation, water usage, solid waste generation and recycling, and reuse of historic buildings. The City's Green Vision, as reflected in these policies, also has a monitoring component that allows for adaptation and adjustment of City programs and initiatives related to sustainability and associated reductions in GHG emissions. The GHG Reduction Strategy is intended to meet the mandates outlined in the CEQA Guidelines, as well as the BAAQMD requirements for Qualified GHG Reduction Strategies.

The City's GHG Reduction Strategy identifies GHG emissions reduction measures to be implemented by development projects as part of three categories: built environment and energy, land use and transportation, and recycling and waste reduction. Some measures are mandatory for all proposed development projects and others are voluntary. Voluntary measures could be incorporated as mitigation measures for proposed projects, at the City's discretion.

The primary test for consistency with the City's GHG Reduction Strategy is conformance with the General Plan Land Use/Transportation Diagram and supporting policies. CEQA clearance for development proposals are required to address the consistency of individual projects with the goals and policies in the General Plan designed to reduce GHG emissions. Compliance with the mandatory measures and voluntary measures (if required by the City) would ensure an individual project's consistency with the GHG Reduction Strategy. Projects that are consistent with the GHG Reduction Strategy would have a less than significant impact related to GHG emissions through 2020 and would not conflict with targets in the currently adopted State of California Climate Change Scoping Plan through 2020.

The environmental impacts of the GHG Reduction Strategy were analyzed in the General Plan FPEIR as supplemented. Beyond 2020, the emission reductions in the GHG Reduction Strategy are not large enough to meet the City's identified 3.04 metric tons (MT) CO_2e/SP efficiency metric for 2035. An additional reduction of 5,392,000 MT CO_2e per year would be required for the projected service population to meet the City's target for 2035.[50]

Achieving the substantial communitywide GHG emissions reductions needed beyond 2020 cannot be done alone with the measures identified in the GHG Reduction Strategy adopted by the City Council in 2015. The General Plan FPEIR disclosed that it would require an aggressive multiple-pronged approach that includes policy decisions and additional emission controls at the federal and state level,

---

[49] City of San José. *Private Sector Green Building*. Accessed June 13, 2016. Available at: <https://www.sanjoseca.gov/index.aspx?NID=3284>

[50] As described in General Plan FPEIR, the 2035 efficiency target above, reflects a straight line 40 percent emissions reduction compared to the projected citywide emissions (10.90 MT CO_2e) for San José in 2020. It was developed prior to issuance of Executive Order S-30-15 in April 2015, which calls for a statewide reduction target of 40 percent by 2030 (five years earlier) to keep on track with the more aggressive target of 80 percent reduction by 2050. The necessary information to estimate a second mid-term or interim efficiency target (e.g., statewide emissions, population and employment in 2030) is being developed by CARB.

new and substantially advanced technologies, and substantial behavioral changes to reduce single occupant vehicle trips—especially to and from work places. Future policy and regulatory decisions by other agencies (such as CARB, California Public Utilities Commission, California Energy Commission, MTC, and BAAQMD) and technological advances are outside the City's control, and therefore could not be relied upon as feasible mitigation strategies at the time of the latest revisions to the GHG Reduction Strategy (e.g., when the Final Supplemental PEIR to the General Plan FPEIR was certified on December 15, 2015). Thus, the City Council adopted overriding considerations for the identified cumulative impact for the 2035 timeframe.

The General Plan includes an implementation program for monitoring, reporting progress on, and updating the GHG Reduction Strategy over time as new technologies or practical measures are identified. Implementation of future updates is called for in General Plan Policies IP-3.7 and IP-17.2 and embodied in the GHG Reduction Strategy. The City of San José recognizes that additional strategies, policies and programs, to supplement those currently identified, would ultimately be required to meet the mid-term 2035 reduction target of 40 percent below 1990 levels in the GHG Reduction Strategy and the target of 80 percent below 1990 emission levels by 2050.

<u>General Plan Policies</u>

The General Plan includes the following GHG reduction policies, which are applicable to the project. These policies are also described within the City's GHG Reduction Strategy.

Policy CD-2.10: Recognize that finite land area exists for development and that density supports retail vitality and transit ridership. Use land regulations to require compact, low-impact development that efficiently uses land planned for growth, particularly for residential development which tends to have a long life-span. Strongly discourage small-lot and single-family detached residential product types in growth areas.

Policy CD-2.11: Within the Downtown and Urban Village Overlay areas, consistent with the minimum density requirements of the pertaining Land Use/Transportation Diagram designation, avoid the construction of surface parking lots except as an interim use, so that long-term development of the site will result in a cohesive urban form. In these areas, whenever possible, use structured parking, rather than surface parking, to fulfill parking requirements. Encourage the incorporation of alternative uses, such as parks, above parking structures.

Policy CD-3.2: Prioritize pedestrian and bicycle connections to transit, community facilities (including schools), commercial areas, and other areas serving daily needs. Ensure that the design of new facilities can accommodate significant anticipated future increases in bicycle and pedestrian activity.

Policy CD-5.1: Design areas to promote pedestrian and bicycle movements and to facilitate interaction between community members and to strengthen the sense of community.

Policy LU-5.4: Require new commercial development to facilitate pedestrian and bicycle access through techniques such as minimizing building separation from public sidewalks; providing safe, accessible, convenient, and pleasant pedestrian connections; and including secure and convenient bike storage.

Policy MS-2.3: Encourage consideration of solar orientation, including building placement, landscaping, design, and construction techniques for new construction to minimize energy consumption.

Policy MS-2.11: Require new development to incorporate green building practices, including those required by the Green Building Ordinance. Specifically, target reduced energy use through construction techniques (e.g., design of building envelopes and systems to maximize energy performance), through architectural design (e.g. design to maximize cross ventilation and interior daylight) and through site design techniques (e.g. orienting buildings on sites to maximize the effectiveness of passive solar design).

Policy MS-14.4: Implement the City's Green Building Policies so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, passive solar building design, and planting of trees and other landscape materials to reduce energy consumption.

Policy TR-2.18: Provide bicycle storage facilities as identified in the Bicycle Master Plan.

Policy TR-3.3: As part of the development review process, require that new development along existing and planned transit facilities consist of land use and development types and intensities that contribute toward transit ridership. In addition, require that new development is designed to accommodate and to provide direct access to transit facilities.

3.7.1.2 *Existing Conditions*

The project site is currently developed with two residences, a mobile home, and farm-related accessory structures. Operation of these buildings generates minimal GHG emissions from motor vehicles traveling to and from the site, and electricity and natural gas usage for lighting, heating and cooling, etc.

3.7.2 Greenhouse Gas Emissions Impacts

3.7.2.1 *Thresholds of Significance*

For the purposes of this EIR, a greenhouse gas emissions impact is considered significant if the project would:

- Generate a greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.7.2.2 *Overview of Impact Assessment*

GHG emissions worldwide cumulatively contribute to the significant adverse environmental impacts of global climate change. No single land use project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in San José, the entire State of California, across the nation and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

Per the CEQA Guidelines, a lead agency may analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions that has been adopted in a public process following environmental review. The City of San José has an adopted GHG Reduction Strategy that was initially approved by the City Council in November 2011 in conjunction with the General Plan, and following litigation, was re-adopted after certification of a Supplemental EIR in December 2015. The City's projected emissions and the GHG Reduction Strategy are consistent with measures necessary to meet statewide 2020 goals established by AB 32 and addressed in the Climate Change Scoping Plan. The City's projected 2035 GHG emissions, could prevent the State of California from maintaining a statewide trajectory to achieve Executive Order S-3-05 emissions levels in 2050, and therefore, would represent a cumulatively considerable contribution to global climate change. The City Council adopted overriding considerations for the identified cumulative GHG impacts for the 2035 timeframe.

The following discussion focuses on whether project emissions represent a cumulatively considerable contribution to climate change as determined by consistency with City of San José and statewide efforts to curb GHG emissions. Projects that are consistent with the City's adopted GHG Reduction Strategy would have a less than significant impact related to GHG emissions for development through 2020.

3.7.2.3 *Consistency with Plans and Policies*

Consistency with the San José Greenhouse Gas Reduction Strategy

The General Plan contains goals and policies adopted for the purpose of reducing GHG emissions, which center around five strategies: energy, waste, water, transportation, and carbon sequestration. These goals and policies are also discussed within the City's GHG Reduction Strategy. Some measures are considered mandatory for all proposed development projects, while others are voluntary. Voluntary measures can be incorporated as mitigation measures for projects at the discretion of the City. The proposed project's consistency with the relevant mandatory GHG reduction criteria is detailed below.

<u>Mandatory Criteria</u>

1. Consistency with the Land Use/Transportation Diagram (General Plan Goals/Policies IP-1, LU-10)

2. Implementation of Green Building Measures (GP Goals: MS-1, MS-2, MS-14)
   - Solar Site Orientation
   - Site Design
   - Architectural Design
   - Construction Techniques
   - Consistency with City Green Building Ordinance and Policies
   - Consistency with GHG Reduction Strategy Policies: MS-1.1, MS-1.2, MC-2.3, MS-2.11, and MS-14.4

3. Pedestrian/Bicycle Site Design Measures
    - Consistency with Zoning Ordinance
    - Consistency with GHGRS Policies: CD-2.1, CD-3.2, CD-3.3, Cd-3.4, CD-3.6, CD-3.8, CD-3.10, CD-5.1, LU-5.4, LU-5.5, LU-9.1, TR-2.8, TR-2.11, TR-2.18, TR-3.3, TR-6.7

4. Salvage building materials and architectural elements from historic structures to be demolished to allow re-use (General Plan Policy LU-16.4), if applicable;

5. Complete an evaluation of operational energy efficiency and design measures for energy-intensive industries (e.g. data centers) (General Plan Policy MS-2.8), if applicable;

6. Preparation and implementation of the Transportation Demand Management (TDM) Program at large employers (General Plan Policy TR-7.1), if applicable; and

7. Limits on drive-through and vehicle serving uses; all new uses that serve the occupants of vehicles (e.g. drive-through windows, car washes, service stations) must not disrupt pedestrian flow. (General Plan Policy LU-3.6), if applicable.

The light industrial development option is consistent with the General Plan land use designation for the site. Bicycle parking would be provided consistent with San José requirements. Given the project is consistent with the General Plan land use designation and the inclusion of bicycle parking, the project would be consistent with the mandatory Criteria 1 and 3.

The light industrial development option would be constructed consistent with the City's required green building measures. Therefore, the project would be consistent with Criteria 2, 4, and 6. Criteria 5 and 7 are not applicable to this project option because the project does not include an energy-intensive industry, drive-through, or vehicle serving uses.

The light industrial development option would be operational prior to the year 2020 and is consistent with the applicable mandatory GHG Reduction Strategy goals and policies intended to reduce GHG emissions. **(Less than Significant Impact)**

The data center/light industrial development option is also consistent with the General Plan and would be consistent with the mandatory Criteria 1 and 3. This option would also be constructed consistent with the City's required green building measures and would not include a drive-through or vehicle service uses. Therefore, the project would be consistent with Criteria 2, 4, 6, and 7.

The data center/light industrial development option includes a data center using 372,222,000 kWh of electricity annually, as well as a PG&E substation. As previously described in Section 3.5.2, the PUE of the data center is expected to be no more than 1.2. Operation of the substation, by itself, would result in negligible daily operational GHG emissions, primarily from employee trips for maintenance purposes. GHG impacts of the substation (which distributes but does not produce electricity), therefore, are not specifically addressed further.

If the data center/light industrial development option is constructed, the data center would be operational prior to the year 2020 and, would be considered to have a less than significant impact related to GHG emissions. The project would, however, be required as a condition of project approval to complete an evaluation of operational energy efficiency and design measures consistent with Criteria 5. The evaluation would have to be completed and submitted to the Director of PBCE for review and approval prior to issuance of building permits for the data center and substation.

Under the data center/light industrial development option, the data center and substation would be operational by the year 2020, but construction of the light industrial component would extend beyond 2020. As described previously and in the Final Supplemental PEIR for the Envision San José 2040 General Plan, the necessary information to estimate a second mid-term or interim efficiency target (e.g., statewide emissions, population and employment in 2030) is being developed by CARB. Under SB 32 and AB 197, CARB is also charged with identifying and adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions to meet this new interim statewide GHG target. Therefore, the information to address this new state interim target at a local level is not currently available and development of an additional target in the City's GHG Reduction Strategy will be required at a later date once the *2030 Target Scoping Plan* is complete.

The City's GHG Reduction Strategy, as well as local and state regulations for energy efficiency and the California's Renewables Portfolio Standard, are measures that would minimize cumulative GHG impacts but not reduce them to a less than significant level by 2035 (mid-term). Development of light industrial development on-site after 2020 could contribute to the previously identified significant GHG emission impacts resulting from implementation of the planned development considered in the Envision San José 2040 General Plan. The project would implement feasible energy efficiency measures to minimize impacts and would not result in any new or greater impacts than were previously identified in the Envision San José 2040 Supplemental FPEIR. The impact would be significant and unavoidable as disclosed in the Envision San José 2040 Supplemental FPEIR. **(Significant Unavoidable Impact)**

Envision San José General Plan

Both project options are consistent with the General Plan and would meet the requirements of City Greenhouse Gas Reduction Strategy. The project would also be required to comply with the City's Green Building measures and would provide bicycle parking. Therefore, the project is consistent with General Plan Policies CD-2.10, CD-2.11, CD-3.2, CD-5.1, LU-5.4, MS-2.3, MS-2.11, MS-14.4, TR-2.18, and TR-3.3. **(Less than Significant Impact)**

3.7.2.4 *Greenhouse Gas Emissions Construction Impacts*

The proposed development would result in temporary increases in GHG emissions associated with construction activities including operation of construction equipment and emissions from construction workers' personal vehicles traveling to and from the project site. Construction-related GHG emissions vary depending on the level of activity, length of the construction period, specific construction operations, types of equipment, and number of personnel. Neither the City of San José nor BAAQMD has established a quantitative threshold or standard for determining whether a project's construction-related GHG emissions are significant. Because project construction will be a temporary condition and would not result in a permanent increase in emissions that would interfere with the implementation of AB 32, the increase in emissions would be less than significant. **(Less Than Significant Impact)**

3.7.3 Mitigation and Avoidance Measures

No mitigation is required or proposed.

3.7.4 Conclusion

Implementation of the proposed project would result in a less than significant GHG emission impact for development through 2020. **(Less Than Significant Impact)**

Beyond 2020, implementation of the project would not result in any new or greater GHG emission impacts than were previously identified in the Envision San José 2040 Final Supplemental PEIR. **(Significant Unavoidable Impact)**

Construction of the proposed project would result in a less than significant GHG construction impact. **(Less Than Significant Impact)**

3.8 HAZARDS AND HAZARDOUS MATERIALS

The following discussion is based, in part, on a Phase I Environmental Site Assessment prepared by *Cornerstone Earth Group, Inc.* in October 2015. The Phase 1 ESA was updated in April 2016. These reports are attached as Appendix I and Appendix J of this EIR, respectively.

3.8.1 Environmental Setting

3.8.1.1 *Regulatory Framework*

Hazardous materials encompass a wide range of substances, some of which are naturally-occurring and some of which are man-made. Examples include pesticides, herbicides, petroleum products, metals (lead, mercury, arsenic, etc.), asbestos, and chemical compounds used in manufacturing and industrial processes. Due to the fact that hazardous substances have properties that are toxic to humans and/or the ecosystem, there are multiple regulatory programs designed to minimize the chance for unintended releases and/or exposures to occur. Other programs establish remediation requirements where soils and/or groundwater contamination has occurred. The net result of regulatory control programs and institutional controls is the reduced likelihood of chemical releases and reduced likelihood of off-site migration of hazardous materials in the event of a release.

The United States Environmental Protection Agency (EPA) is the federal administering agency for hazardous waste programs. State agencies include the California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC), State Water Resources Control Board (SWRCB), and the California Air Resources Board (CARB). Regional agencies include the San Francisco Bay Regional Water Quality Control Board (RWQCB), and the Bay Area Air Quality Management District (BAAQMD). Local agencies including the San José Fire Department (SJFD) and the Santa Clara County Department of Environmental Health (SCCDEH) have been granted the responsibility for implementation and enforcement of many hazardous materials regulations under the Certified Unified Program Agency (CUPA) program. The Santa Clara Valley Water District (SCVWD) monitors groundwater quality and supports groundwater clean-up efforts.

Existing City regulations that reduce or avoid impacts with hazards and hazardous materials include:

- City of San José Hazardous Materials Release Response Plans and Inventory
- City of San José Hazardous Materials Storage Ordinance and Toxic Gas Ordinance
- City of San José Building and Fire Codes
- City of San José Municipal Code (Chapters 6.14, 17.12, 17.88, and 20.80)

U.S. Environmental Protection Agency

The USEPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. The legislation includes the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (commonly referred to as "Superfund"), the Superfund Amendments and Reauthorization Acts of 1986, and the Resource Conservation and Recovery Act of 1986. The USEPA provides oversight and supervision for site investigations and remediation projects, and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes.

3.8.1.2 *State and Regional*

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) serves as the umbrella agency for the Department of Toxic Substances Control (DTSC), the Office of Environmental Health Hazard Assessment (OEHHA), and the SWRCB and its associated regional Water Boards.

Department of Toxic Substance Control

The DTSC regulates remediation of sites where discharges to land could potentially present a public health risk. California legislation, for which the DTSC has primary enforcement authority, includes the Hazardous Waste Control Act and the Hazardous Substance Account Act. The DTSC generally acts as the lead agency for soil and groundwater cleanup projects, and establishes cleanup and action levels for subsurface contamination that are equal to, or more restrictive than, federal levels.

Office of Environmental Health Hazard Assessment

The mission of the OEHHA is to protect and enhance public health and the environment by objective scientific evaluation of risks posed by hazardous substances.

State Water Resources Control Board

The SWRCB, through its nine regional boards, regulates discharge of potentially hazardous materials to waterways and aquifers and administers basin plans for groundwater resources in various regions of the State. The San Francisco Bay RWQCB is the regional board that has jurisdiction over the project area. The SWRCB provides oversight for sites at which the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions.

Regional Water Quality Control Board

San Francisco Bay RWQCB regulates discharges and releases to surface and groundwater in the project area. The RWQCB generally oversees cases involving groundwater contamination. Within the San Francisco Bay RWQCB, the County of San Mateo Health Services Agency (CSMHSA) handles most leaking underground storage tank (LUST) cases, so the RWQCB may oversee cases involving other groundwater contaminants (i.e. Spills, Leaks, Incidents, and Clean-up cases). In the case of spills at a project site, the responsible party would notify the CSMHSA, and then a lead regulator (either the CSMHSA, RWQCB or DTSC) would be determined.

Envision San José General Plan Policies

The Envision San José 2040 General Plan includes policies applicable to all development projects in San José. The following are applicable to the proposed project:

Policy EC-7.1: For development and redevelopment projects, require evaluation of the proposed site's historical and present uses to determine if any potential environmental conditions exist that could adversely impact the community or environment.

Policy EC-7.2: Identify existing soil, soil vapor, groundwater, and indoor air contamination and mitigation for identified human health and environmental hazards to future users and provide as part of the environmental review process for all development and redevelopment projects. Mitigation measures for soil, soil vapor, and groundwater contamination shall be designed to avoid adverse human health or environmental risk, in conformance with regional, state, and federal laws, regulations, guidelines, and standards.

Policy EC-7.3: Where a property is located in near proximity of known groundwater contamination with volatile organic compounds or within 1,000 feet of an active or inactive landfill, evaluate and mitigate the potential for indoor air intrusion of hazardous compounds to the satisfaction of the City's Environmental Compliance Officer and appropriate regional, state and federal agencies prior to approval of a development or redevelopment project.

Policy EC-7.5: On development and redevelopment sites, require all sources of imported fill to have adequate documentation that it is clean and free of contamination and/or acceptable for the proposed land use considering appropriate environmental screening levels for contaminants. Disposal of groundwater from excavations on construction sites shall comply with local, regional, and state requirements.

Alviso Master Plan

The *Alviso Master Plan* includes policies applicable to all development projects within the plan area. The following policies are specific to hazardous materials and are applicable to the proposed project.

Industrial/Non-Industrial Relationships Policy 1: Industrial uses are not allowed to store, handle, dispose, and/or use acutely hazardous materials within one-quarter mile of residential uses, George Mayne School, New Chicago Marsh (I.e., National Wildlife Refuge) and other sensitive uses and habitats.

Industrial/Non-Industrial Relationships Policy 1: The Light Industrial areas located north of State Street and adjacent to Coyote Creek should mitigate potential negative environmental impacts to nearby natural resources.

3.8.1.3 *Existing Conditions*

Historical Uses of the Project Site

Based on the information presented in the Phase I ESA, the site has been historically used for agricultural purposes. The site was initially used as a pear orchard circa 1923. During that time, pesticides were applied by vehicle throughout the orchard. In later years, the site was used to cultivate row crops including lettuce and asparagus.

Current Uses of the Project Site

Since 2000, the land has been uncultivated agricultural land. There are two residences, a mobile home, and ancillary farm-related structures on-site.

3.8.1.4 *On-Site Sources of Contamination*

Recognized Environmental Conditions

Based on findings of the Phase I ESA, the following recognized environmental conditions are associated with the project site:

Pesticide Use

As noted above, the project site was historically used for agricultural purposes including orchards and row crops. Pesticides and herbicides were reportedly applied to crops in the normal course of farming operations. Soil sampling was completed on-site as part of the Phase 1 ESA Update. The sampling detected several organochlorine pesticides at levels below commercial environmental screening criteria. Soil samples taken near the former farm equipment storage area and in the northwestern corner of the site contained elevated lead and arsenic concentrations in excess of the Soluble Threshold Limit Concentration (STLC).

Aboveground Storage Tanks

The site once had five aboveground storage tanks (AST) that stored diesel, gasoline, and waste oil. One of the ASTs was estimated to have a capacity of approximately 250 gallons and was located in the east-central portion of the storage yard. A second AST storing waste oil was located in the northwestern section of the storage yard and had an estimated capacity of approximately 500 gallons. Soils underneath this storage tank were observed to be stained as part of the Phase I ESA prepared for the project.

Soil and groundwater sampling was performed in the general areas of the locations of former petroleum ASTs. VOCs or gasoline-range petroleum hydrocarbons were not detected above laboratory reporting limits. Diesel- and oil-range petroleum hydrocarbons were detected in some soil and/or groundwater samples but at concentrations that were less than their respective residential environmental screening criteria.

Based on the testing completed, former ASTs do not appear to have significantly impacted soil or groundwater quality.

Historically Recognized Environmental Conditions

Underground Storage Tank

A 3,000 gallon underground storage tank (UST) was removed from the site in 1988. In October 1991, an unidentified quantity of impacted soil was over-excavated from the former UST area. Soil samples were collected at this location to confirm the extent of the contamination. In December 1991, three ground water monitoring wells were installed in the area of the former UST and later destroyed under permit from the Santa Clara Valley Water District in 1998.

In August 1998, the Santa Clara Valley Water District issued a case closure letter and stated that no further action related to the underground tank release was required.

3.8.1.5 *Other On-Site Sources of Contamination*

Asbestos and Lead Based Paint

Friable asbestos is any asbestos-containing material (ACM) that, when dry, can easily be crumbled or pulverized to a powder by hand allowing the asbestos particles to become airborne. Common examples of products that have been found to contain friable asbestos include acoustical ceilings, plaster, wallboard, and thermal insulation for water heaters and pipes. Non-friable ACMs are materials that contain a binder or hardening agent that does not allow the asbestos particles to become airborne easily. Common examples of non-friable ACMs are asphalt roofing shingles, vinyl asbestos floor tiles, and transite siding made with cement. Non-friable ACMs can pose the same hazard as friable asbestos during remodeling, repairs, or other construction activities that would damage the material. Use of friable asbestos products was banned in 1978.

In 1978, the Consumer Products Safety Commission banned paint and other surface coating materials containing lead. The existing buildings on-site were constructed after 1980. Because the existing structures on the project site were constructed prior to 1980, it is likely that ACMs and/or lead based paints are present in the structures on-site. Additionally, soil adjacent to on-site structures that are painted with lead-containing paint can become impacted with lead as a result of the weathering and/or peeling of painted surfaces.

3.8.1.6 *Off-Site Sources of Contamination*

800 Thomas Foon Chew Way

The LECEF is located at 800 Thomas Foon Chew Way adjacent to the western boundary of the site. The facility was listed on the TCRA-SQG, RCRA-LQG, AST, CUPA listing, EMI, NPDES, and San José Hazmat databases. The site is also identified as a closed LUST case. Although these database listing indicate that hazardous materials are used and stored at LECEF, there are no recorded releases of hazardous materials except for the LUST case listing.

The three former USTs on the LECEF site, including a 300 gallon gasoline tank and two 10,000 gallon diesel tanks which were removed in November 2001, do not appear to have impacted the project site.

3.8.1.7 *Database Records Search*

A database search was completed to determine whether the project site is listed on any federal, state, local, historical, and/or brownfield databases as a known or suspected source of contamination, or a site that handles or stores hazardous materials.

A database search of leaking underground storage tanks (LUST) identified a 300 gallon gasoline UST, as previously discussed. The 300 gallon UST was removed from the site in 1988 and has since been listed as a closed case on the LUST database. The California State Water Resources Control Board's Geotracker database did not identify any active cases on or adjacent to the project site.

3.8.2 Hazards and Hazardous Materials Impacts

3.8.2.1 *Thresholds of Significance*

For the purposes of this EIR, a hazards and hazardous materials impact is considered significant if the project would:

- Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.8.2.2 *Consistency with Plans*

The project site is not located within an airport safety zone and is not within one-quarter mile of any school, residences, or New Chicago Marsh. As discussed below, there is a probability of asbestos and lead-based paint on the project site. Mitigation measures and standard abatement measures have been identified to reduce potential health risks associated with on-site contaminants to a less than significant level. Therefore, the project is consistent with General Plan Policies CD-EC-7.1, EC-7.2, EC-7.3, and EC-7.5, and Master Plan Policies Industrial/Non-Industrial Relationships Policy 1 and Industrial/Non-Industrial Relationships Policy 1.

3.8.2.3 *Hazardous Materials Impacts from the Project*

The project site is not listed as a hazardous waste or substances site on any regulatory database and, therefore, would not result in a significant hazards to the public or environmental due to accidental chemical releases. **(Less Than Significant Impact)**

The nearest school to the project site is George Mayne Elementary School, located approximately three miles east of the site at 5030 N. 1st Street, Alviso. Since the nearest school is more than one-quarter mile from the site, emissions and hazardous materials handling at the site, during project construction or operation, would not pose a significant health risk to nearby schools. **(No Impact)**

Project Operation Impacts

Operation of the proposed project would include the use and storage of cleaning supplies and maintenance chemicals. No other hazardous materials would be used or stored on-site. The small quantities of cleaning supplies and maintenance chemicals that would be transported, used and stored on-site, would not generate substantial hazardous emissions or accidental chemical releases that would pose a risk to site users. Compliance with applicable federal, state and local handling, storage, and disposal requirements would ensure that no significant hazards to future site users are created by the routine transport, use, or disposal of hazardous substances. **(Less Than Significant Impact)**

Project Construction Impacts

Soil Contamination Impacts

The project site is not listed as a hazardous waste or substances site on a regulatory database. Construction on the project site could, however, disturb on-site soils with residual agricultural pesticide contamination, and expose construction workers to elevated concentrations of pesticide chemicals.

Impact HAZ-1: Implementation of the proposed project could release pesticide chemicals from on-site soils into the environment, and expose construction workers to residual agricultural soil contamination. **(Significant Impact)**

Asbestos-Containing Materials and Lead-Based Paint

The project would demolish all existing structures on-site which include two residences, a mobile home, and farm-related accessory structures. Given the age of structures on-site, it is likely that these structures contain ACMs and/or lead-based paint. Demolition of these structures could release asbestos particles into the environment and expose construction workers to harmful levels of asbestos.

The project site would be required to conform to the following regulatory programs and to implement the following permit conditions, consistent with OSHA requirements, to reduce impacts due to the presence of ACMs and/or lead-based paint:

Permit Conditions:

- In conformance with state and local laws, a visual inspection/pre-demolition survey, and possible sampling, shall be conducted prior to the demolition of on-site structures to determine the presence of asbestos-containing materials and/or lead-based paint.

- During demolition activities, all building materials containing lead-based paint shall be removed in accordance with Cal/OSHA Lead in Construction Standard, Title 8, California Code Regulations 1532.1, including employee training, employee air monitoring, and dust control. Any debris or soil containing lead-based paint or coatings would be disposal of at landfills that meet acceptance criteria for the waste being disposed.

- All potentially friable ACMs shall be removed in accordance with ENSHAP guidelines prior to structure demolition that may disturb the materials. All demolition activities will be undertaken in accordance with Cal/OSHA standards contained in Title 8 of CCR, Section 1529, to protect workers from asbestos exposure.

- A registered asbestos abatement contractor shall be retained to remove and dispose of ACMs identified in the asbestos survey performed for the site in accordance with the standards stated above.

- Materials containing more than one percent asbestos are also subject to BAAQMD regulations. Removal of materials containing more than one percent asbestos shall be completed in accordance with BAAQMD requirements and notifications.

The General Plan FPEIR concluded that conformance with the federal, state, and local regulatory requirements would result in a less than significant impact from ACMs and Lead. **(Less Than Significant Impact)**

3.8.2.4 *Other Hazards*

The project site is not located within the Airport Land Use Plan of the Norman Y. Mineta San José International Airport nor located within the vicinity of a private airstrip. Project implementation would not, therefore, interfere with airport operations. **(No Impact)**

Emergency Response

Access to the site would be provided by two new public streets from Zanker Road. Existing access from Ranch Drive near the southeast corner of the site would be maintained over Coyote Creek for trucks accessing the LECEF site west of the project site, emergency vehicle access, and bicycles and pedestrians on the Coyote Creek Trail. Under Option 1, both streets would be public streets utilized to access the light industrial uses from Zanker Road. Under Option 2, the data center portion of the project site would be accessed through a secured entry adjacent to the substation on the northern side of the site. Emergency vehicle access under Option 2 would be provided by the Ranch Drive access route. The project would, therefore, not interfere with any emergency response or evacuation plans. **(No Impact)**

According to CAL FIRE, the project site is not located within an area subject to wildfires. Implementation of the proposed project would not, therefore, expose people to natural hazards from wildfire risk.[51] **(No Impact)**

3.8.2.5 *Existing Hazardous Materials Conditions Affecting the Project*

On December 17, 2015, the California Supreme Court issued an opinion in "CBIA vs. BAAQMD" holding that CEQA is primarily concerned with the impacts of a project on the environment and generally does not require agencies to analyze the impact of existing conditions on a project's future users unless the project risks exacerbating those environmental hazards or risks that already exist.

---

[51] CAL FIRE. *Very High Fire Hazard Severity Cones in LRA, Santa Clara County.* http://frap.fire.ca.gov/webdata/maps/santa_clara/fhszl_map.43.pdf. Accessed on November 21, 2016.

As described in *Section 3.8.1.4* and *Section 3.8.2.3,* soils on-site are contaminated with residual pesticide chemicals from former agricultural operations. Limited sampling previously conducted on a portion of the project site identified concentrations of organochlorine pesticides (i.e. DDT, DDE, and DDD) at concentrations less than the residential or industrial regional screening levels in soils on-site. Additional sampling in areas where agricultural equipment was stored detected elevated levels of lead and arsenic above STLC limits. Additional soil sampling is recommended for these portions of the site. Since contaminated soils would be hauled off-site and/or contained and capped with asphalt in accordance with the proposed soil management plan (see mitigation measures in Section 3.8.3), on-site soil contamination would not pose a health risk to future park users or future occupants of the project site. Therefore, the project would be consistent with Policy EC-7.2.

Impacts of Off-Site Facilities to the Project

As mentioned previously in *Section 4.9.1.4,* off-site sources of contamination, including the USTs located on the adjacent LECEF property and soil and groundwater contamination on the easterly adjacent property would not impacts soils and/or groundwater on the project site.

3.8.3 Mitigation and Avoidance Measures

The following mitigation measures are included in the proposed project to reduce soil contamination impacts to a less than significant level.

MM HAZ-1.1: A Site Management Plan (SMP) shall be prepared and implemented (as outlined below) and any contaminated soils found in concentrations above established thresholds shall be removed and disposed of according to California Hazardous Waste Regulations or the contaminated portions of the site shall be capped beneath the planned development under the regulatory oversight of the Santa Clara County Department of Environmental Health (SCCDEH) or State Department of Toxic Substances Control (DTSC). The contaminated soil removed from the site shall be hauled off-site and disposed of at a licensed hazardous materials disposal site.

Components of the SMP shall include, but shall not be limited to:

- A detailed discussion of the site background;
- Preparation of a Health and Safety Plan by an industrial hygienist;
- Notification procedures if previously undiscovered significantly impacted soil or free fuel product is encountered during construction;
- On-site soil reuse guidelines based on the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region's reuse policy;
- Sampling and laboratory analyses of excess soil requiring disposal at an appropriate off-site waste disposal facility;
- Soil stockpiling protocols; and
- Protocols to manage ground-water that may be encountered during trenching and/or subsurface excavation activities.

MM HAZ-1.2: All contractors and subcontractors at the project site shall develop a Health and Safety Plan (HSP) specific to their scope of work and based upon the known environmental conditions for the site. The HSP shall be approved by the PBCE Supervising Environmental Planner and Environmental Services Department (ESD) and implemented under the direction of a Site Safety and Health Officer. The HSP shall include, but shall not be limited to, the following elements, as applicable:

- Provisions for personal protection and monitoring exposure to construction workers;
- Procedures to be undertaken in the event that contamination is identified above action levels or previously unknown contamination is discovered;
- Procedures for the safe storage, stockpiling, and disposal of contaminated soils;
- Provisions for the on-site management and/or treatment of contaminated groundwater during extraction or dewatering activities; and
- Emergency procedures and responsible personnel.

The SMP shall be submitted to SCCDEH, DTSC, or equivalent regulatory agency for review and approval. Copies of the approved SMP shall be provided to the PBCE Supervising Environmental Planner and Environmental Services Department (ESD) prior to issuance of grading permits.

With implementation of the identified mitigation measures, impacts from contaminated soils on-site would be reduced to a less than significant level.

3.8.4 Conclusion

With implementation of identified mitigation measures, applicable General Plan policies, and existing regulations, the proposed development would have a less than significant hazardous materials impact. **(Less than Significant Impact With Mitigation)**

3.9 HYDROLOGY AND WATER QUALITY

3.9.1 Environmental Setting

3.9.1.1 *Regulatory Framework*

Federal Emergency Management Agency

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victims and the increasing amount of damage caused by floods. The NFIP makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.

Federal Emergency Management Agency (FEMA) manages the NFIP and creates Flood Insurance Rate Maps (FIRMs) that designate 100-year floodplain zones and delineate other flood hazard areas. A 100-year floodplain zone is the area that has a one in one hundred (one percent) chance of being flooded in any one year based on historical data.

Clean Water Act and Porter-Cologne Water Quality Control Act

The federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act are the primary laws that govern water quality. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. The CWA outlines the Federal laws for regulating discharges of pollutants, as well as sets minimum water quality standards for all Waters of the United States. At the Federal level, the Environmental Protection Agency (EPA) implements pollutant control programs to regulate quality standards for surface waters. The Porter-Cologne Act established the State Water Resources Control Board (SWRCB) which implements water quality regulations on a state-wide level.

Several mechanisms are employed to control domestic, industrial, and agricultural pollution under the CWA. At the federal level, the CWA is administered by the United States Environmental Protection Agency. At the state and regional level, the CWA is administered and enforced by the SWRCB and the nine Regional Water Quality Control Boards (RWQCB). The State of California has developed a number of water quality laws, rules, and regulations to assist in the implementation of the CWA and related federally mandated water quality requirements. In many cases, the federal requirements set minimum standards and policies and the laws, rules, and regulations adopted by the state and regional boards exceed the federal requirements.

CWA Section 303(d) requires states to list all polluted water bodies that require further attention to support future uses. Currently, Coyote Creek is listed on the California 303(d) list[52] for Diazinon and trash with a Total Maximum Daily Load (TMDL)[53] and the implementation plans are in place.[54]

---

[52] The Clean Water Act, section 303, establishes water quality standards and TMDL programs. The 303(d) list is a list of impaired water bodies.
[53] A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards.
[54] California State Water Quality Control Board website. Accessed November 17, 2016. http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml?wbid=CAR205500401999021813956

Nonpoint Source Pollution Program

In 1988, the SWRCB adopted the Nonpoint Source Management Plan in an effort to control nonpoint source pollution in California. In December 1999, the Plan was updated to comply with the requirements of Section 319 of the Clean Water Act and Section 6217 of the Coastal Zone Act Reauthorization Amendment (CZARA) of 1990. The Nonpoint Source Program requires individual permits to control discharge associated with construction activities. The Nonpoint Source Program is administered by the RWQCB under the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities. Projects must comply with the requirements of the Nonpoint Source Program if:

- They disturb one acre or more of soil; or
- They disturb less than one acre of soil but are part of a larger development that, in total, disturbs one acre or more of soil.

The NPDES General Permit for Construction Activity requires the developer to submit a Notice of Intent (NOI) to the RWQCB and to develop a Stormwater Pollution Prevention Plan (SWPPP) to control discharge associated with construction activities.

<u>Statewide Construction General Permit</u>

The SWRCB has implemented a NPDES General Construction Permit for the State of California. For any projects that disturb one or more acres of land, the project applicant is required to submit a Notice of Intent (NOI) to the State Board and a Storm Water Pollution Prevention Plan (SWPPP) must be prepared prior to commencement of construction. The SWPPP addresses appropriate measures for reducing construction and post-construction impacts.

All development projects, whether subject to the Construction General Permit or not, shall comply with the City of San José's Grading Ordinance, which requires the use of erosion and sediment controls to protect water quality while the site is under construction. Prior to the issuance of a permit for grading activity occurring during the rainy season (October 1 to April 30), the project will submit to the Director of Public Works an Erosion Control Plan detailing BMPs that will prevent the discharge of stormwater pollutants.

Municipal Regional Stormwater NPDES Permit (MRP)/C.3 Requirement

The San Francisco Bay RWQCB also has issued a Municipal Regional Stormwater NPDES Permit (MRP) for the region. In an effort to standardize stormwater management requirements, this permit replaces the formerly separate countywide municipal stormwater permits with a regional permit for 77 Bay Area municipalities, including the City of San José. Under provisions of the NPDES MRP, projects that add and/or replace more than 10,000 square feet of impervious surface, or 5,000 square feet of uncovered parking area, are required to design and construct stormwater treatment controls to treat post-construction stormwater runoff.

The MRP requires regulated projects to include Low Impact Development (LID) practices, such as pollutant source control measures and stormwater treatment features aimed to maintain or restore the site's natural hydrologic functions. The MRP also requires that stormwater treatment measures are properly installed, operated, and maintained.

Santa Clara Valley Urban Runoff Pollution Prevention Program

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) was developed in accordance with the requirements of the 1986 San Francisco Bay Basin Water Quality Control Plan, for the purpose of reducing water pollution associated with urban stormwater runoff. This program was also designed to fulfill the requirements of Section 304(1) of the federal Clean Water Act, which mandated that the Federal Environmental Protection Agency develop NPDES application requirements for storm water runoff.

City of San José Post-Construction Urban Runoff Management (Policy 6-29)

The City of San José's Policy No. 6-29 implements the stormwater treatment requirements of Provision C.3 of the Municipal Regional Stormwater NPDES Permit. The City's Policy No. 6-29 requires all new and redevelopment projects regardless of size and land use to implement post-construction Best Management Practices (BMPs) and Treatment Control Measures (TCM) to the maximum extent practicable. This policy also established specific design standards for post-construction TCMs for projects that create, add, or replace 10,000 square feet or more of impervious surface area to use site design and source control measures and numerically-sized Low Impact Development (LID) stormwater treatment measures in accordance with the strategies set forth in the policy.

City of San José Hydromodification Management (Policy 8-14)

The City of San José's Policy No. 8-14 implements the stormwater treatment requirements of Provision C.3 of the Municipal Regional Stormwater NPDES Permit. Policy No. 8-14 requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. The policy requires these projects to be designed to control project-related hydromodification through a Hydromodification Management Plan (HMP).

Based on the SCVUPPP watershed map for the City of San José, the project site is exempt from the NPDES hydromodification requirements because it is located in a catchment to hardened channel and/or tidal area.[55,56] The project shall comply with Policy 8-14 as it is applicable at the Development Permit stage for any future development on-site.

Envision San José 2040 General Plan

The *Envision San José 2040 General Plan* includes policies applicable to all development projects in San José.

Policy ER-8.1: Manage stormwater runoff in compliance with the City's Post-Construction Urban Runoff (6-29) and Hydromodification Management (8-14) Policies.

---

[55] Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/hmp_maps.htm Accessed November 11, 2016.

[56] City of San José Council Policy. *Post-Construction Hydromodification Management*. https://www.sanjoseca.gov/DocumentCenter/View/3916 Accessed November 30, 2016.

Policy ER-8.3: Ensure that private development in San José includes adequate measures to treat stormwater runoff.

Policy ER-8.5: Ensure that all development projects in San José maximize opportunities to filter, infiltrate, store and reuse or evaporate stormwater runoff onsite.

Policy EC-4.1: Design and build all new or remodeled habitable structures in accordance with the most recent California Building Code and municipal code requirements as amended and adopted by the City of San José, including provisions for expansive soil, and grading and storm water controls.

Policy EC-5.16: Implement the Post-Construction Urban Runoff Management requirements of the City's Municipal NPDES Permit to reduce urban runoff from project sites.

Action EC-7.10: Require review and approval of grading, erosion control and dust control plans prior to issuance of a grading permit by the Director of Public Works on sites with known soil contamination. Construction operations shall be conducted to limit the creation and dispersion of dust and sediment runoff.

Alviso Master Plan

The following policies are specific to hydrology and water quality and are specific to the proposed project.

Environmental Protection Policy 1: All new parking, circulation, loading, outdoor storage, utility, and other similar activity areas must be located on paved surfaces with proper drainage to avoid potential pollutants from entering the groundwater, Guadalupe River, Coyote Creek, or San Francisco Bay.

Storm Drainage Policy 1: All new development projects should be evaluated to determine the possible need for additional storm drainage facilities.

3.9.1.2 *Existing Conditions*

Flooding

Based on the FEMA Flood Insurance Rate Maps (Map 06085C0066J, dated February 19, 2014), the project site is located in Flood Zone X. Zone X is designated as areas of 0.2 annual chance flood, areas of one percent annual chance flood with average depths of less than one foot or with drainage areas of less than one square mile, and areas protected by levees from one percent annual chance floods.[57]

Levees are located on both sides of Coyote Creek in the project area, including along the eastern boundary of the site. The levees were constructed by the US Army Corps of Engineers with the SCVWD as the local sponsor. The levees function as critical flood protection structures, providing the surrounding area and project site from 100-year flood events.

[57] Federal Emergency Management Agency. *Flood Insurance Rate Map. Map Number 06085C0066J.* February 19, 2014.

Dam Failure

Based on the SCVWD dam failure inundation hazard maps, the project site is located within the Anderson Dam failure inundation hazard zone but outside the Lexington Dam failure inundation zone.[58,59]

Seiches, Tsunamis, and Mudflows

There are no landlocked bodies of water near the project site that would affect the site in the event of a seiche. There are no bodies of water near the project site that would affect the site in the event of a tsunami.[60] The site is located on the nearly flat Santa Clara Valley floor and is not subject to the risk of mudflows.

Storm Drainage System

There is currently no formal drainage system on-site. Stormwater runoff is assumed to sheet flow from the site towards Zanker Road, and empties into Coyote Creek which flows to the Bay. The adjacent LECEF facility discharges into Coyote Creek via an existing private storm drain force main, which crosses through the project site, and connects to a 48-inch creek outfall located at the southern end of the project site.

Stormwater Runoff

The water quality of Coyote Creek is directly affected by pollutants contained in stormwater runoff from a variety of urban and non-urban uses. Stormwater from urban uses contain metals, pesticides, herbicides, and other contaminants, including oil, grease, asbestos, lead, and animal wastes. Based on the data from the EPA[61], the Coyote Creek is currently listed on the California 303(d)[62] list for trash and Diazinon.

3.9.2 Hydrology and Water Quality Impacts

3.9.2.1 *Thresholds of Significance*

For the purposes of this EIR, a hydrology and water quality impact is considered significant if the project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local

[58] Santa Clara Valley Water District. *Lexington Reservoir 2009 Flood Inundation Maps. 2009.* http://www.valleywater.org/Services/LexingtonReservoirAndLenihanDam.aspx Accessed November 17, 2016.
[59] Santa Clara Valley Water District. *Anderson Dam and Reservoir 2009 Flood Inundation Maps. 2009.* http://www.valleywater.org/Services/AndersonDamAndReservoir.aspx Accessed November 17, 2016.
[60] Association of Bay Area Governments. *Tsunami Inundation Emergency Planning Map for the San Francisco Bay Region.* <http://quake.abag.ca.gov/tsunamis>. Accessed November 17, 2016.
[61] United States Environmental Protection Agency. *California 303(d) Listed Waters.* http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.impaired_waters_list?p_state=CA&p_cycle=2012 Accessed December 8, 2016.
[62] The Clean Water Act, section 303, establishes water quality standards and TMDL programs. The 303(d) list is a list of impaired water bodies.

groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures which would impeded or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Inundation by seiche, tsunami, or mudflow.

3.9.2.2 *Consistency with Plans*

The project would be required to comply with all applicable federal, state, and local water quality and stormwater control standards and permits, as well as all regulations pertaining to flood zones. The project would be consistent with FEMA regulations, the federal CWA, the SWRCB NPDES programs for construction and post-construction, San José Council Policies 6-29 and 8-14, and General Plan Policies ER-8.1, ER-8.3, ER-8.5, EC-4.1, and EC-5.16. In addition, the project would be consistent with Environmental Protection Policy 1 and Storm Drainage Policy 1 from the Alviso Master Plan.

3.9.2.3 *Water Quality Impacts*

Construction Impacts

Implementation of the proposed project would involve demolition of the existing structures, trenching for on- and off-site utilities, and grading of the project site. The project could also include the installation of a stormwater outfall to Coyote Creek if it is determined that connection to the Oakmead Pump Station on the Guadalupe River is not feasible. Because construction activities on- and off-site site would disturb more than one acre of land, the project would be required to comply with the General Construction Permit and prepare a SWPPP for construction activities.

Pursuant to the City's requirements, the following measures, based on RWQCB recommendations, have been included in the project as permit conditions to reduce potential construction-related water quality impacts:

Permit Conditions

- Burlap bags filled with drain rock shall be installed around storm drains to route sediment and other debris away from the drains.
- Earthmoving or other dust-producing activities would be suspended during periods of high winds.
- All exposed or disturbed soil surfaces would be watered at least twice daily to control dust as necessary.
- Stockpiles of soil or other materials that can be blown by the wind would be watered or covered.
- All trucks hauling soil, sand, and other loose materials would be covered and all trucks would be required to maintain at least two feet of freeboard.
- All paved access roads, parking areas, staging areas and residential streets adjacent to the construction sites would be swept daily (with water sweepers).
- Vegetation in disturbed areas would be replanted as quickly as possible.
- All unpaved entrances to the site shall be filled with rock to remove mud from tires prior to entering City streets. A tire wash system may also be installed at the request of the City.

With implementation of the identified construction measures and compliance with the NPDES General Construction Permit, construction of the proposed project would have a less than significant impact on water quality. **(Less Than Significant Impact)**

Post-Construction Impacts

Under existing conditions, the site has approximately 42,887 square feet (two percent) of impervious surfaces. Implementation of the project would increase impervious surfaces on-site by approximately 75 percent (2,102,204 square feet). The increase in impervious surfaces would increase stormwater runoff generated from the project site, which could impact water quality.

The project would be required to comply with the City of San José's Post-Construction Urban Runoff Policy 6-29 and the RWQCB Municipal Regional Stormwater NPDES permit. The City's Post-Construction Urban Runoff Policy 6-29 establishes specific requirements to reduce stormwater pollution from new and redevelopment projects. The RWQCB Municipal Regional Stormwater NPDES permit requires all post-construction stormwater runoff to be treated by numerically sized Low Impact Development (LID) treatment controls.

In order to meet these requirements, the following design measures have been incorporated into the project to reduce stormwater runoff:

- A 100-foot buffer zone from the toe of the Coyote Creek levee would be established along the eastern boundary of the site to minimize any impacts to Coyote Creek or the existing levee.
- Landscaping would be designed to minimize irrigation and runoff, and to maintain surface infiltration (where practical).
- Runoff from parking lots and sidewalks would be directed through landscaped areas.

- All runoff from access roads and sidewalks would be directed via a piped network into a bioretention area (to be constructed along the eastern boundary of the site) or a flow-through planter located on the western boundary of the site.

The on-site treatment facilities would be numerically sized and would have sufficient capacity to treat runoff entering the storm drainage system, consistent with the NPDES requirements. Details of the specific site design, pollutant source control, and stormwater treatment control measures demonstrating compliance with Provision C.3 of the Municipal Regional Permit shall be included in the project design to the satisfaction of the Director of PBCE. The stormwater runoff could be discharged into a new outfall pipe into Coyote Creek or conveyed to the existing Oakmead Pump Station on the Guadalupe River, approximately two miles southwest of the project site. The outfall, if required, would be sized appropriately to convey stormwater from the project site as well as City held lands east of Zanker Road.

The General Plan FPEIR concluded that with the regulatory programs currently in place, stormwater runoff from new development would have a less than significant impact on stormwater quality. With implementation of a Stormwater Control Plan consistent with RWQCB and compliance with the City's regulatory policies pertaining to stormwater runoff, operation of the proposed project would have a less than significant water quality impact. **(Less Than Significant Impact)**

3.9.2.4 *Groundwater Impacts*

The conversion of existing pervious surfaces to impervious surfaces may decrease stormwater infiltration into an underlying groundwater basin. The project site does not, however, substantially contribute to recharging of the groundwater aquifers and is not a former recharge area. Development of new industrial land uses allowed under the General Plan would not occur within any SCVWD's percolation facilities for groundwater recharge nor would it affect the operation of existing percolation or recharge facilities. Therefore, implementation of the project would not interfere with groundwater recharge or cause a reduction in overall groundwater supply. **(Less Than Significant Impact)**

Groundwater depth in the immediate project area ranges from approximately 8.5 feet below ground surface (bgs) to 11 feet bgs.[63] The project would not require any substantial excavations and, as a result, the proposed project would not interfere with groundwater flow or impact any groundwater aquifers. **(Less Than Significant Impact)**

3.9.2.5 *Drainage Pattern Impacts*

The proposed project would not substantially alter the existing drainage pattern of the site or area through the alteration of any waterway. As a result, the project would not substantially increase erosion or increase the rate or amount of stormwater runoff. **(Less Than Significant Impact)**

[63] Cardno ATC. *Phase I Environmental Site Assessment of Agricultural Land Adjacent to 800 Thomas Foon Chew Way.* March 20, 2015 (Appendix I).

3.9.2.6 *Storm Drainage Impacts*

The approximate existing and proposed square footages of impervious and pervious surfaces on-site for Option 1 (light industrial and data center uses) are summarized in Table 3.9-1 below.

Table 3.9-1: Pervious and Impervious Surfaces On-Site (Option 1)

Site Surface	Existing/Pre-Construction (sf)	%	Project/Post-Construction (sf)	%	Difference (sf)	%
Impervious						
Building Footprint	20,288	1	829,925	30	+809,637	+16
Hardscape	22,599	1	1,272,279	45	+773,945	+28
Subtotal	42,887	2	2,102,204	75	+1,222,188	+44
Pervious						
Landscaped Areas	0	0	459,015	16		
Other Pervious Surfaces (Vacant Land)	2,770,452	98	1,523,257	54	-1,222,188	-44
Subtotal	2,770,452	98				
Total	2,813,135	100	2,813,135	100		

Note: Minor discrepancies may occur due to rounding. The above is for the project site only. Off-site roadways will be calculated as roadways are constructed. Applicable C3 provisions shall apply.

Under existing conditions, the project site is approximately 98 percent pervious. Implementation of the project would decrease pervious surfaces by approximately 75 percent (2,102,204 square feet), which would result in a substantial increase in stormwater runoff when compared to the existing condition on-site

The General Plan FPEIR concluded that although new development and redevelopment allowed under the General Plan may result in an increase in impervious surfaces, implementation of applicable City policies and existing regulations would result in a less than significant impact on the existing storm drainage system. **(Less Than Significant Impact)**

3.9.2.7 *Seiches, Tsunamis, and Mudflows*

There are no bodies of water near the project site that would affect the project area in the event of a seiche or tsunami. The project area is flat and there are no mountains in proximity. Therefore, development of the project would not cause mudflows that would impact adjacent properties. **(Less Than Significant Impact)**

3.9.2.8 *Existing Flood Conditions Affecting the Project*

The California Supreme Court in a December 2015 opinion (*BIA v. BAAQMD*) confirmed CEQA is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project, which are discussed below.

Based on the FEMA Flood Insurance Rate Maps, the project site is located in Flood Zone X; areas determined to be outside the one percent annual chance floodplains. Implementation of the proposed project would not redirect flood flows or expose people or structures to significant flood hazards. The project site is located within the Anderson Dam failure inundation zone. The California Division of Safety of Dams (DSOD) is responsible for inspecting dams on an annual basis to ensure the dams are safe, performing as intended, and not developing problems. As part of its comprehensive dam safety program, the SCVWD routinely monitors and studies the condition of each of its 10 dams, including Anderson Dam.

The General Plan FPEIR concluded that new development and redevelopment under the General Plan could result in placement of new development in Special Flood Hazard Areas and dam failure inundation zone; however, implementation of the City's policies and regulations would substantially reduce flooding and drainage hazards.

3.9.3 Conclusion

Implementation of the proposed project would have a less than significant impact to hydrology and water quality. **(Less Than Significant Impact)**

3.10 LAND USE AND PLANNING, POPULATION/HOUSING, AND AGRICULTURAL/FORESTRY RESOURCES

3.10.1 Environmental Setting

3.10.1.1 *Regulatory Framework*

Local land use is governed by the City of San José 2040 General Plan. The current General Plan and zoning designation, as they relate to the project site, are described below.

Envision San José 2040 General Plan

The project site is currently designated *LI – Light Industrial* under the City's General Plan. This land use designation is defined as follows:

> This designation is intended for a wide variety of industrial uses and excludes uses with unmitigated hazardous or nuisance effects. Warehousing, wholesaling, and light manufacturing are examples or typical uses in this designation. Light Industrial designated properties may also contain service establishments that serve only employees of businesses located in the immediate industrial area. Office and higher-end industrial uses such as research and development, are discouraged in order to preserve the scarce, lower cost land resources that are available for companies with limited operation history (start-up companies) or lower cost industrial operations.
>
> Because of the limited supply of land available for industrial/suppliers/services firms in the City, Land Use Policies in the General Plan restrict land use changes on sites designated Light Industrial.

The City's General Plan includes the following policies applicable to the proposed project:

Policy CD-1.1: Require the highest standards of architectural and site design, and apply strong design controls for all development projects, both public and private, for the enhancement and development of community character and for the proper transition between areas with different types of land uses.

Policy CD-4.9: For development subject to design review, ensure the design of new or remodeled structures is consistent or complementary with the surrounding neighborhood fabric (including but not limited to prevalent building scale, building materials, and orientation of structures to the street).

Policy ER-2.1: Ensure that new public and private development adjacent to riparian corridors in San José are consistent with the provisions of the City's Riparian Corridor Policy Study and any adopted Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP).

Policy ER-2.2: Ensure that a 100-foot setback from riparian habitat is the standard to be achieved in all but a limited number of instances, only where no significant impacts would occur.

Policy ER-2.3: Design new development to protect adjacent riparian corridors from encroachment of lighting, exotic landscaping, noise and toxic substances into the riparian zone.

San José Zoning Code

The project site is zoned *Agricultural (Planned Development)* or A(PD). Under the A(PD) zoning district, no building, structure or land shall be used and no building or structure shall be erected, enlarged or structurally altered, or demolished in any planned development district, except in accordance with the provisions set forth in Chapter 20.60 of the Municipal Code.

Alviso Master Plan

The project site is located within the boundaries of the Alviso Master Plan area. Under the Alviso Master Plan, the project site has a land use designation of *Light Industrial*. The *Light Industrial* designation allows for a wide variety of industrial uses, excluding any uses with unmitigated hazardous or nuisance effects. Light industrial uses include warehousing, wholesaling, light manufacturing, and industrial supplier/service businesses. Only low intensity uses (i.e., those with low employment densities) are allowed in the Light Industrial area near Coyote Creek.

The following Alviso Master Plan policies are applicable to the proposed project.

Environmental Protection Policy 3: The riparian corridors adjacent to Coyote Creek and Guadalupe River should be preserved intact. Any development adjacent to the waterways should follow the City's Riparian Corridor policies.

3.10.1.2 *Existing Conditions*

The 64.5-acre project site is located north of Highway 237 between Zanker Road and Coyote Creek in the City of San José. The site is primarily fallow farmland with two residences, a mobile home, and farm-related accessory structures located near the southern boundary of the site. Site access is limited to Alviso Milpitas Road along the southern boundary of the project site (adjacent to SR 237), which crosses Coyote Creek, becomes Ranch Drive in the City of Milpitas, and connects to McCarthy Boulevard.

The *Santa Clara County Important Farmlands 2012 Map* designates the project site as Prime Farmland. Prime Farmland is defined as land with the combination of physical and chemical features able to sustain long-term agricultural production.

3.10.1.3 *Surrounding Land Uses*

The project area west of Coyote Creek is primarily undeveloped. The site is generally an L-shaped parcel, as shown on Figure 2.0-3. To the south and west of the site is the LECEF facility, a power plant that consists of four natural gas turbines, four heat recovery steam generators, and one steam turbine. A PG&E electrical substation is located north of the LECEF facility, and west and south of the project site. High power transmission lines run north to south through this area, near the LECEF facility.

The San José-Santa Clara Regional Wastewater Facility (RWF) is located northwest of the project site, on the west side of Zanker Road. The drying beds for the RWF are located immediately north of the project site. The South Bay Water Recycling Facility (SBWR) is located northwest of the project site. The eastern boundary of the site is adjacent to Coyote Creek. The site is separated from the creek by an eight-foot SCVWD levee. East of Coyote Creek is a small office development and the McCarthy Ranch Marketplace in the City of Milpitas.

As previously mentioned, Alviso Milpitas Road is immediately south of the project site. South of the roadway is SR 237. The project site is generally at the same elevation as SR 237 where it runs adjacent to the site.

3.10.2 <u>Land Use and Planning Impacts</u>

3.10.2.1 *Thresholds of Significance*

For the purposes of this EIR, a land use and planning impact is considered significant if the project would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.
- Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use;
- Induce substantial population growth in an area, either directly or indirectly;
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Land use conflicts can arise from two basic causes: 1) a new development or land use may cause impacts to persons or the physical environment in the vicinity of the project site or elsewhere; or 2) conditions on or near the project site may have impacts on the persons or development introduced onto the site by the new project. Both of these circumstances are aspects of land use compatibility. Potential incompatibility may arise from placing a particular development or land use at an inappropriate location, or from some aspect of the project's design or scope. Depending on the nature of the impact and its severity, land use compatibility conflicts can range from minor irritations and nuisance to potentially significant effects on human health and safety. The discussion below distinguishes between potential impacts *from* the proposed project *upon* persons and the physical environment, and potential impacts *from* the existing surroundings *upon* the project itself.

3.10.2.2 *Consistency with Plans*

The proposed project would be designed in accordance with applicable design standards and the City's Riparian Corridor policies. Therefore, the project would be consistent with General Plan Policies CD-1.1, CD-4.9, ER-2.1, ER-2.2, and ER-2.3 and Master Plan Policy Environmental Protection Policy 3.

3.10.2.3 *Consistency with the General Plan and Zoning*

The project site is currently designated *LI – Light Industrial* under the City's General Plan and zoned A(PD). Implementation of either development option would allow for redevelopment of the site with light industrial land uses which would provide both local and regional jobs along a major transportation corridor and in proximity to existing housing and services. Therefore, the project site is consistent with the General Plan land use designation.

The project proposes to rezone the site to *LI - Light Industrial*, consistent with the current General Plan designation. Both development options would be subject to the development standards and uses allowed under the LI zoning, which are shown in Table 3.10-1. As such, the data center/light industrial development option would require a Special Use Permit for the data center (Table 20-110 of the San José Municipal Code).

Table 3.10-1: Light Industrial Zoning Development Standards

Requirement	Development Standard
Front Setback	15 feet to building
	20 feet to parking
Side Setback	0 or 25 feet from a residential district
Rear	0 or 25 feet from a residential district
Maximum Height	50 feet

The project, under either development option, is consistent with the City's General Plan and zoning code. **(Less Than Significant Impact)**

3.10.2.4 *Land Use Impacts*

Changes in land use are not adverse environmental impacts in and of themselves, but they may create conditions that adversely affect existing uses in the immediate vicinity. The proposed project is an industrial development located within an area of mixed development (vacant lands, office, commercial, and infrastructure), just off a major transportation corridor (SR 237).

Both project options are consistent with the General Plan. The General Plan FPEIR concluded that land use conflicts, including impacts to existing businesses and other land uses, can be substantially limited or precluded with implementation of applicable General Plan policies and actions for planning and implementation as well as conformance with identified ordinances and adopted design guidelines. The proposed project would comply with all applicable City policies, actions and ordinances, and would be consistent with adopted design guidelines. Therefore, the proposed project would have a less than significant impact on surrounding land uses. **(Less Than Significant Impact)**

The project proposes to construct new access roads to provide access to the site from Zanker Road. The new roadways would be built to current City of San José standards and would provide direct access to SR 237 without routing traffic through Milpitas or Alviso. The road would be constructed on City-held land and would benefit future planned development in the immediate project area. The construction of the new roads and development of the project site would not physically divide an established community. **(Less Than Significant Impact)**

The project site is in a sparely developed urban area and is subject to an adopted Habitat Conservation Plan (HCP). Please see Section 3.3 *Biological Resources*, for a complete discussion of the projects consistency with the Santa Clara Valley Habitat Plan. **(Less Than Significant Impact)**

3.10.2.5 *Agricultural and Forestry Impacts*

The *Santa Clara County Important Farmlands 2012 Map* designates the project site as Prime Farmland. Prime Farmland is defined as land with the combination of physical and chemical features able to sustain long-term agricultural production. This land may have been previously used for irrigated agricultural production prior to the mapping date.[64] Implementation of the proposed project would result in the conversion of land designated as Prime Farmland to non-agricultural use.

Impact AGR-1: The proposed project would result in the loss of land designated as Prime Farmland. **(Significant Impact)**

3.10.2.6 *Population and Housing Impacts*

According to California Department of Finance 2010 census data estimates for 2012, San José has a population of 957,405 persons. As of 2012 the City of San José had approximately 305,711 households with an average 3.13 persons per household and 1.6 employed residents per household.[65] By comparison, Santa Clara County has an average household size of approximately 2.9 persons. According to the City's General Plan, the projected population in 2035 will be 1.3 million persons occupying 429,350 households.

The jobs/housing balance refers to the ratio of employed residents to jobs in a given community or area. When the ratio reaches 1.0, a balance is struck between the supply of local housing and jobs. The jobs/housing resident ratio is determined by dividing the number of local jobs by the number of employed residents that can be housed in local housing. Currently, San José has a higher number of employed residents than jobs (approximately 0.8 jobs per employed resident) but this trend is projected to reverse with full build-out under the current General Plan.

---

[64] California Natural Resources Agency. *Santa Clara County Important Farmlands 2012.* Accessed November 17, 2016. <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/scl12.pdf>

[65] State of California Department of Finance. *Census 2010.* 2010. <http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1&prodType=table> Accessed December 8, 2016.

Construction of the proposed project would result in demolition of the two single-family houses, a mobile home, and farm-related accessory structures located near the southern end of the site. The project would permanently displace the current occupants on-site; however, the loss of two single-family houses and a mobile home would not substantially reduce the total number of housing within the City or necessitate the construction of housing elsewhere. **(Less Than Significant Impact)**

3.10.3 Mitigation and Avoidance Measures

As discussed in the Envision San José 2040 General Plan FPEIR, there are no feasible mitigation measures available to reduce the loss of agricultural land within areas previously planned and designated for development within the City's Urban Growth Boundary. The General Plan FPEIR concluded that the loss of agricultural land in the City is significant and unavoidable.

3.10.4 Conclusion

The proposed project would convert Prime Farmland to non-agricultural use, which would result in a significant and unavoidable impact. The impact would be significant and unavoidable as disclosed in the Envision San José 2040 Supplemental FPEIR. **(Significant Unavoidable Impact)**

Implementation of the project would not substantially reduce the total number of housing units in San José or necessitate the construction of housing elsewhere. **(Less Than Significant Impact)**

The proposed project would be compatible with all adjacent and nearby land uses, would not displace a substantive number of existing residences, and would not contribute to the jobs/housing imbalance in the City. With approval of the proposed rezoning, the proposed project would comply with relevant land use policies and regulations. **(Less Than Significant Impact)**

3.11 NOISE AND VIBRATION

3.11.1 Environmental Setting

3.11.1.1 *Regulatory Framework*

State CEQA Guidelines

CEQA contains guidelines to evaluate the significance of effects resulting from a proposed project. These guidelines have been used in this EIR as thresholds for establishing potentially significant noise impacts and are listed under *Thresholds of Significance.*

CEQA does not define what noise level increase would be considered substantial. Typically, project-generated permanent noise level increases of three Ldn or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (60 Ldn). Where noise levels would remain below the normally acceptable noise level standard with the project, permanent noise level increases of five Ldn or greater would be considered significant.

Envision San José 2040 General Plan

The Envision San José 2040 General Plan includes policies applicable to all development projects in San José. The City's noise and land use compatibility guidelines are shown in Table 3.11-1, below. Relevant City policies and municipal code standards are also listed.

Table 3.11-1: Proposed General Plan Land Use Compatibility Guidelines (GP Table EC-1)

Land Use Category	Exterior DNL Value in Decibels					
	55	60	65	70	75	80
1. Residential, Hotels and Motels, Hospitals and Residential Care[1]						
2. Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
3. Schools, Libraries, Museums, Meeting Halls, and Churches						
4. Office Buildings, Business Commercial, and Professional Offices						
5. Sports Arena, Outdoor Spectator Sports						
6. Public and Quasi-Public Auditoriums, Concert Halls, and Amphitheaters						

[1]Noise mitigation to reduce interior noise levels pursuant to Policy EC-1.1 is required.

Normally Acceptable:
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable:
Specified land use may be permitted only after detailed analysis of the noise reduction requirements and noise mitigation features included in the design.

Unacceptable:
New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies. Development will only be considered when technically feasible mitigation is identified that is also compatible with relevant design guidelines.

Policy EC-1.1: Locate new development in areas where noise levels are appropriate for the proposed uses. Consider federal, state and City noise standards and guidelines as a part of new development review.

Policy EC-1.2: Minimize the noise impacts of new development on land uses sensitive to increased noise levels (Categories 1, 2, 3 and 6) by limiting noise generation and by requiring use of noise attenuation measures such as acoustical enclosures and sound barriers, where feasible. The City considers significant noise impacts to occur if a project would:

- Cause the DNL at noise sensitive receptors to increase by five dBA DNL or more where the noise levels would remain "Normally Acceptable"; or
- Cause the DNL at noise sensitive receptors to increase by three dBA DNL or more where noise levels would equal or exceed the "Normally Acceptable" level.

Policy EC-1.3: Mitigate noise generation of new non-residential land uses to 55 dBA DNL at the property line when located adjacent to existing or planned noise sensitive residential and public/quasi-public land uses.

Policy EC-1.6: Regulate the effects of operational noise from existing and new industrial and commercial development on adjacent uses through noise standards in the City's Municipal Code.

Policy EC-2.3: Require new development to minimize vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, a vibration limit of 0.08 in/sec PPV will be used to minimize the potential for cosmetic damage to a building. A vibration limit of 0.20 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction.

Municipal Code – Construction Standards

According to San José Municipal Code, construction hours within 500 feet of a residential unit are limited to the hours of 7:00 a.m. to 7:00 p.m. on Monday through Friday, unless otherwise expressly allowed in a Development Permit or other planning approval. The Municipal Code does not establish quantitative noise limits for demolition or construction activities occurring in the City.

3.11.1.2 *Background*

Noise is typically defined as unwanted sound and is subjective due to varying tolerances. Acceptable levels of noise also vary from land use to land use. In any one location, the noise level will vary over time, from the lowest background or ambient noise level to temporary increases caused by traffic or other sources. State and federal standards have been established as guidelines for determining the compatibility of a particular land use with its noise environment.

Sound levels are usually measured in decibels (dB) with dB corresponding roughly to the threshold of hearing. Most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called “A” weighting, and the dB level so measured is call the *A-weighted sound level* (dBA).

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources which create a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_{01}, L_{10}, L_{50}, and L_{90}, are commonly used. They are the A-weighted noise levels equaled or exceeded during 1, 10, 50, and 90 percent of a stated time period. Sound level meters can accurately measure environmental noise levels to within about plus or minus one dBA. Since the sensitivity to noise increases during the evening hours, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Day/Night Average Sound Level, Ldn*, is the average A-weighted noise level during a 24-hour day, obtained after the addition of 10 dB to noise levels measured in the nighttime between 10:00 PM and 7:00 AM.

The most widespread and continual sources of noise in San José are transportation and transportation-related facilities. Freeways, local arterials, the Norman Y. Mineta San José International Airport, railroads, and Light Rail Transit are all major contributors to noise in San José.

Construction Noise

Construction is a temporary source of noise impacting residences and businesses located near construction sites. Construction noise can be significant for short periods of time at any particular location and generates the highest noise levels during grading and excavation, with lower noise levels occurring during building construction. Large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 85 to 90 dBA at a distance of 50 feet. Typical hourly average construction-generated noise levels are approximately 80 to 85 dBA measured at a distance of 50 feet from the site during busy construction periods. Some construction techniques, such as pile driving, can generate noise levels up to 105 dBA at 50 feet that are difficult to control. Construction activities can elevate noise levels at adjacent businesses and residences by 15 to 20 dBA or more during construction hours.

Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the Peak Particle Velocity (PPV) and another is the Root Mean Square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. In this section, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction generated vibration for building damage and human complaints. Table 3.11-2 shows the general reactions of people and the effects on building that continuous vibration levels produce. As with noise, the effects of vibration on individuals is subjective due to varying tolerances.

Table 3.11-2: Effects of Vibration

PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings.
0.5	Severe – vibration considered unpleasant	Threshold at which there is a risk of damage to newer residential structures.

Source: Transportation and Construction-Induced Vibration Guidance Manual, California Department of Transportation, June 2004.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, etc. The rattling sound can give rise to exaggerated vibration complaints, even though there is little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans. The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of the physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels such as people in an urban environment may tolerate higher vibration levels.

Structural damage can be classified as cosmetic, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structure damage to a building. Construction-induced vibration that can be detrimental to a building is very rare and has only been observed in instances where the structure is in a high state of disrepair and the construction activities occur immediately adjacent to the structure.

3.11.1.3 *Existing Conditions*

Based on the San José 2040 General Plan Final Program Environmental Impact Report (FPEIR), the project site currently experiences noise levels from 55 to 75 dBA.[66] The primary noise source in the immediate project area is traffic on SR 237. As such, noise levels on the southern end of the site are substantially greater than noise levels on the northern end of the site.

Sensitive Receptors

The closest sensitive receptors to the project site are the existing residences along Murphy Ranch Road in Milpitas, about 1,650 feet south of the project site. Other sensitive receptor are the residences located approximately 3,100 feet east in Milpitas and mobile homes located approximately 3,400 feet southwest in San José. There is a daycare facility along Barber Lane, about 3,500 feet southeast of the site.

3.11.2 <u>Noise and Vibration Impacts</u>

3.11.2.1 *Thresholds of Significance*

For the purposes of this EIR, a noise and vibration impact is considered significant if the project would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

The CEQA Guidelines state that a project will normally be considered to have a significant impact if noise levels conflict with adopted environmental standards or plans, or if noise levels generated by the project will substantially increase existing noise levels at noise-sensitive receivers on a permanent or temporary basis. CEQA does not define what noise level increase would be substantial. A three dBA noise level increase is considered the minimum increase that is perceptible to the human ear. Typically, project generated noise level increases of three dBA DNL or greater are considered significant where resulting exterior noise levels will exceed the normally acceptable noise level standard. Where noise levels will remain at or below the normally acceptable noise level standard with the project, a noise level increase of five dBA DNL or greater is considered significant.

[66] San José 2040 General Plan FPEIR, Figure 3.3-1, page 312.

City of San José Standards

Based on the Municipal Code and policies identified above, the City of San José relies on the following guidelines for new development to avoid impacts above the CEQA thresholds of significance outlined above.

Construction Noise

For temporary construction-related noise to be considered significant, construction noise levels would have to exceed ambient noise levels by five dBA L_{eq} or more and exceed the normally acceptable levels of 60 dBA L_{eq} at the nearest noise-sensitive land uses or 70 dBA L_{eq} at office or commercial land uses for a period of more than 12 months.

Traffic-Generated Noise

Development allowed by the General Plan would result in increased traffic volumes along roadway throughout San José. The City of San José considers a significant noise impact to occur where existing noise sensitive land uses would be subject to permanent noise level increases of three dBA DNL or more where noise levels would equal or exceed the "Normally Acceptable" level, or five dBA DNL or more where noise levels would remain "Normally Acceptable".

Construction Vibration

The City of San José relies on guidance developed by Caltrans to address vibration impacts from development projects in San José. A vibration limit of 12.7 mm/sec (0.5 inches/sec), PPV for buildings structurally sound and designed to modern engineering standards. A conservative vibration limit of 5.0 mm/sec (0.2 inches/sec) PPV has been used for buildings that are found to be structure sounds but structural damage is a major concern. For historic buildings or buildings that are documented to be structurally weakened, a conservative limit of 2.0 mm/sec (0.08 inches/sec), PPV is used to provide the highest level of protection.

3.11.2.2 *Consistency with Plans*

The proposed project would be a light industrial development or a combined data center and light industrial development. These land uses are not considered noise sensitive. Furthermore, there are no noise sensitive land uses in proximity to the project site. As such, the project would be consistent with Policies EC-1.1, EC-1.2, EC-1.3, EC-1.6, and EC-2.3.

3.11.2.3 *Noise Impacts from the Project Site*

Project-Generated Traffic Noise

Based upon the traffic study prepared by *Hexagon Transportation Consultants* (see Section 3.14*)*, the proposed maximum development would generate approximately 8,364 daily trips.

A noise increase is considered substantial if it would 1) increase the ambient noise level by five dBA DNL or more when future noise levels would be less than 60 dBA DNL, or 2) increase the ambient noise level by three dBA DNL or more when future noise levels would be 60 dBA DNL or greater.

As shown on Figure 3.3-1 of the Envision San José 2040 General Plan FPEIR, noise volumes on the adjacent and nearby roadways range from a low of 65 dBA (Zanker Road) to above 75 dBA (SR 237). While the project would result in an increase in traffic trips on these roadways, the volume of traffic would not be sufficient to increase existing noise levels by three dBA or more. As a result, the proposed project would not result in a significant noise impact from traffic. **(Less Than Significant Impact)**

Mechanical Equipment

The proposed light industrial buildings would have rooftop mechanical equipment including HVAC systems and elevator operating systems. The data center would have generators and cooling towers which would also generate noise when in operation or during testing and maintenance. The General Plan Policy EC-1.6 requires existing and new industrial development to reduce the effects of operational noise on adjacent industrial uses through compliance with noise standards[67] in the City's Municipal Code (Sections 20.40.600 and 20.50.300). The project is not, however, adjacent to or in proximity to residential land uses. As such, mechanical equipment screening would not be required and operation of the project under either development option would have a less than significant impact from mechanical equipment noise. **(Less Than Significant Impact)**

3.11.2.4 *Construction Impacts*

Construction Noise

Construction activities associated with implementation of the proposed project would temporarily increase noise levels in the project area. The duration of the noise is dependent on which development option is constructed. For the light industrial development option, the construction period would be approximately 21 months. For the data center/light industrial development option, the overall construction period could extend beyond 21 months, but would occur in two separate phases. Construction activities generate considerable amounts of noise, especially during the construction of project infrastructure when heavy equipment is used.

There are no noise-sensitive land uses in the immediate vicinity of the project. As a result, while construction of the proposed project would temporarily increase noise levels in the immediate area of the project site, construction activities would result in a less than significant noise impact. **(Less Than Significant Impact)**

Construction Vibration

Construction activities would include demolition of three existing residences and accessory structures, site preparation work, foundation work, and construction of the new buildings. General Plan policy EC-2.3 states the following regarding vibration from demolition and construction:

> "**EC-2.3:** Require new development to minimize vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, a vibration limit of 0.08 in/sec PPV (peak particle velocity) will be used to minimize the potential for cosmetic damage to a

[67] Per the Municipal Code, the industrial buildings cannot generate noise greater than 70 dBA at the shared property line with the adjacent industrial development.

building. A vibration limit of 0.20 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction."

Construction activities such as drilling, use of jackhammers (approximately 0.035 in/sec PPV at 25 feet), rock drills and other high-power or vibratory tools (approximately 0.09 in/sec PPV at 25 feet), and rolling stock equipment such as tracked vehicles, compactors, etc. (approximately 0.89 in/sec PPV at 25 feet) may generate substantial vibration in the immediate site vicinity. Construction of the buildings is not anticipated to be a source of substantial vibration with the exception of sporadic events such as dropping of heavy objects, which should be avoided to the extent possible.

The adjacent LECEF facility has a few small structure, but all of the structure are more than 200 feet from the adjacent property lines. As such, use of heavy equipment on-site would not cause vibration levels above the 0.20 in/sec PPV criteria established by the City. **(Less Than Significant Impact)**

3.11.2.5 *Existing Noise Conditions Affecting the Project*

The California Supreme Court in a December 2015 opinion (*BIA v. BAAQMD*) confirmed CEQA is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project; nevertheless the City has policies that address existing conditions (e.g. noise) affecting a proposed project, which are addressed below.

The policies of the City of San José 2040 General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Based on the General Plan noise and land use compatibility guidelines, commercial/office development is allowed in areas with ambient noise levels up to 70 dBA DNL and is conditionally allowed in areas with noise levels up to 80 dBA DNL.

The light industrial buildings nearest SR 237 would be exposed to ambient noise levels of up to 75 dBA. The California Green Building Code requires that industrial buildings be constructed to provide an interior noise environment of 50 dBA in occupied areas during any hour of operation. A typical commercial building envelope provides at least a 30 dBA reduction in traffic noise. The noise exposure at the proposed building façades along SR 237 would be up to 75 dBA DNL. With exterior noise levels up to 75 dBA DNL, the interior noise levels would be 45 dBA with standard construction techniques. As a result, interior noise levels would comply with Green Building Code standards.

The project site is located approximately 3.4 miles northeast of Mineta San José International Airport and is not within the Airport Influence Area or the Airport Noise Contours.

3.11.3 Mitigation and Avoidance Measures for Noise Impacts

No mitigation is required or proposed.

3.11.4 Conclusion

Construction and operation of the project will have a less than significant noise and vibration impact. **(Less Than Significant Impact)**

3.12 PUBLIC SERVICES/RECREATION

3.12.1 Environmental Setting

Unlike utility services, public services are provided to the community as a whole, usually from a central location or from a defined set of nodes. The resource base for delivery of the services, including the physical service delivery mechanisms, is financed on a community-wide basis, usually from a unified or integrated financial system. The service delivery agency can be a city, county, service or other special district. Typically, new development would create an incremental increase in the demand for these services. The amount of demand would vary widely, depending on both the nature of the development (residential vs. industrial, for instance) and the type of services, as well as on the specific characteristics of the development (such as senior housing vs. multi- or single-family housing).

The impact of a particular project on public services and facilities is generally a fiscal impact. By increasing the demand for a type of service, a project could cause an eventual increase in the cost of providing the service (e.g., more personnel hours to patrol an area, additional fire equipment needed to service a tall building, etc.). This is a fiscal impact; not an environmental one.

CEQA does not require an analysis of fiscal impacts unless the increased demand triggers the need for a new facility (such as a school or fire station), since the new facility would have a physical impact on the environment.

3.12.1.1 *Regulatory Framework*

San José General Plan

The following General Plan policies related to the public services and recreational facilities are applicable to the proposed project:

Policy PR-1.1: Provide 3.5 acres per 1,000 population of neighborhood/community serving parkland through a combination of 1.5 acres of public parks and 2.0 acres of recreational school grounds open to the public per 1,000 San José residents.

Policy PR-1.2: Provide 7.5 acres per 1,000 population of citywide/regional park and open space lands through a combination of facilities provided by the City of San José and other public land agencies.

Policy CD-5.5: Include design elements during the development review process that address security, aesthetics, and safety. Safety issues include, but are not limited to, minimum clearances around buildings, fire protection measures such as peak load water requirements, construction techniques, and minimum standards for vehicular and pedestrian facilities and other standards set forth in local, state, and federal regulations.

Policy ES-3.1: Provide rapid and timely Level of Service response time to all emergencies:

a. For police protection, achieve a response time of six minutes or less for 60 percent of all Priority 1 calls, and of eleven minutes or less for 60 percent of all Priority 2 calls.

b. For fire protection, achieve a total response time (reflex) of eight minutes and a total travel time of four minutes for 80 percent of emergency incidents.
c. Enhance service delivery through the adoption and effective use of innovative, emerging techniques, technologies and operating models.
d. Measure service delivery to identify the degree to which services are meeting the needs of San José's community.
e. Ensure that development of police and fire service facilities and delivery of services keeps pace with development and growth in the city.

Policy ES-3.9: Implement urban design techniques that promote public and property safety in new development through safe, durable construction and publically-visible and accessible spaces.

Policy ES-3.11: Ensure that adequate water supplies are available for fire-suppression throughout the City. Require development to construct and include all fire suppression infrastructure and equipment needed for their projects.

Alviso Master Plan

The following policies are specific to public services and are specific to the proposed project.

Police Policy 1: As development occurs in Alviso, police services should be evaluated for possible expansion.

Fire Policy 1: As development occurs in Alviso, fire service should be evaluated to determine if an expansion of services is warranted.

3.12.1.2 *Existing Conditions*

Fire Projection Services

Fire protection services for the project would be provided by the SJFD. Fire stations are located throughout the City to provide adequate response times to calls for service. SJFD responds to all fires, hazardous materials spills, and medical emergencies (including injury accidents) in the City. The closest station to the project site is Station No. 25, located at 1525 Wilson Way. The fire station is located approximately 3.4 miles west of the project site.

For fire protection services, the General Plan identifies a service goal of eight minutes and a total travel time of four minutes or less for 80 percent of emergency incidents.

Police Projection Services

Police protection services for the project site are provided by the San José Police Department (SJPD). Officers are dispatched from police headquarters, located at 201 West Mission Street. The police headquarters is located approximately 6.7 miles south of the project site.

The General Plan identifies a service goal of six minutes or less for 60 percent of all Priority 1 (emergency) calls and 11 minutes of less for 60 percent of all Priority 2 (nonemergency) calls.

Schools

The project proposes light industrial development. The project does not include any residential land uses that would generate school age children.

Parks/Trails

The City's Departments of Parks, Recreation, and Neighborhood Services is responsible for the development, operation, and maintenance of all City park facilities. The City of San José owns and maintains approximately 3,486 acres of parkland, including neighborhood parks, community parks, regional parks, golf courses, and open space. The City also has 25 community centers, 12 senior centers, and 14 youth centers, though some are temporarily closed due to budget constraints. Other recreational facilities include six public skate parks and over 70.5 miles of trails.

The City's goal is to provide 3.5 acres of neighborhood/community serving parkland per 1,000 population, 7.5 acres of citywide/regional park and open space lands per 1,000 population, and 500 square feet of community center facilities per 1,000 population. There are no parks within the City of San José located within a 10 minute walk of the project site.

The Class I Coyote Creek Trail is located on the east side of the creek, east of the project site in the City of Milpitas. The trail is identified as a Regional Trail on the Santa Clara County Trails Master Plan.[68]

Libraries

The San José Public Library is the largest public library system between San Francisco and Los Angeles. The San José Public Library System consists of one main library and 22 branch libraries. The nearest branch library is the Alviso Branch Library located at 5050 North First Street, approximately 3.2 miles west of the site.

3.12.2 Public Services Impacts

3.12.2.1 *Thresholds of Significance*

For the purposes of this EIR, a public services impact is considered significant if the impacts are associated with:

- The provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
  - Fire protection
  - Police protection
  - Schools
  - Parks
  - Other public facilities.

[68] Santa Clara County Parks. *Countywide Trails Master Plan.* Accessed March 15, 2017. <https://www.sccgov.org/sites/parks/PlansProjects/Pages/countywide-trails-mstr-pln.aspx>.

- An increase in 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; or
- Include recreational facilities or require the construction of expansion of recreational facilities which might have an adverse physical effect on the environment.

3.12.2.2 *Consistency with Plans*

The proposed project would be built to current code and safety standards. Therefore, the project would be consistent with General Plan Policies PR-1.1, PR-1.2, CD-5.5, ES-3.1, ES-3.9, ES-3.11 and Alviso Master Plan Police Policy 1 and Fire Policy 1.

3.12.2.3 *Fire and Police Protection Services*

The proposed development would result in a dense industrial development on a mostly vacant site and would place more people on-site during regular business hours than exist currently. As a result, the project would increase demand for fire and police services. The project is consistent with the planned growth in the General Plan and construction of new fire and police stations, other than those already planned, would not be required to provide service to the site consistent with the City's service goals.

The proposed project would be constructed in accordance with current building codes and would be required to be maintained in accordance with applicable City policies identified in the General Plan FPEIR to avoid unsafe building conditions and promote public safety. **(Less Than Significant Impact)**

3.12.2.4 *Schools*

The project proposes to construct light industrial development. No new students would be generated by implementation of the proposed project. Therefore, the proposed project would have no impact on school facilities or capacities in the City. **(No Impact)**

3.12.2.5 *Other Recreational Facilities*

Parks/Trails

The proposed development would place more people on-site during regular business hours than exist currently; however, an increase in the daily employee population in the City would not result in a substantial increase in usage of local recreational facilities. Although future employees on-site may use City parks, County trails, or community centers, weekday employees are unlikely to place a major physical burden on these facilities which would necessitate the construction of new facilities to meet City service goals. The proposed project includes a Class I trail connection on the south side of the site, along Alviso-Milpitas Road to provide a trail connection to the Coyote Creek Trail on the east side of the creek. Therefore, the proposed project would not have a significant impact on recreational facilities in the City. **(Less Than Significant Impact)**

Libraries

The General Plan FPEIR concluded that development and redevelopment allowed under the General Plan would be adequately served by existing and planned library facilities. The proposed development would not include any residential uses and, as a result, the proposed project would have minimal impact on library facilities in the City of San José. **(Less Than Significant Impact)**

3.12.3 Conclusion

Implementation of the proposed project would incrementally increase the demand for police and fire protection services in the project area. The proposed development is consistent with the planned growth in the Envision San José 2040 General Plan and, would not result in the need to construct new police or fire facilities. Due to the nature of the proposed development, the project would not impact existing school, recreational, or library facilities. **(Less Than Significant Impact)**

3.13 TRANSPORTATION/TRAFFIC

The following discussion is based on a transportation impact analysis prepared by *Hexagon Transportation Consultants* in March 2017. The report can be found in Appendix K.

3.13.1 <u>Environmental Setting</u>

3.13.1.1 *Regulatory Framework*

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area, including Santa Clara County. MTC is charged with regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities in the region. MTC and the Association of Bay Area Governments (ABAG) adopted the final *Plan Bay Area* in July 2013 which includes the region's Sustainable Communities Strategy and the most recently adopted Regional Transportation Plan (2040).

Congestion Management Program

The Santa Clara Valley Transportation Authority (VTA) oversees the Congestion Management Program (CMP). The relevant state legislation requires that all urbanized counties in California prepare a CMP in order to obtain each county's share of the increased gas tax revenues. The CMP legislation requires that each CMP contain the following five mandatory elements: 1) a system definition and traffic level of service standard element; 2) a transit service and standards element; 3) a trip reduction and transportation demand management element; 4) a land use impact analysis program element; and 5) a capital improvement element. The Santa Clara County CMP includes the five mandated elements and three additional elements, including: a county-wide transportation model and data base element, an annual monitoring and conformance element, and a deficiency plan element.

Level of Service Standards and City Council Policy 5-3

As established in City Council Policy 5-3 Transportation Impact Policy (2005), the City of San José uses the same LOS method as the CMP, although the City's standard is LOS D rather than LOS E. According to this policy and GP Policy TR-5.3, an intersection impact would be satisfactorily mitigated if the implementation of measures would restore level of service to existing conditions or better, unless the mitigation measures would have an unacceptable impact on the neighborhood or on other transportation facilities (such as pedestrian, bicycle, and transit facilities). The City's Transportation Impact Policy (also referred to as the Level of Service Policy) protects pedestrian and bicycle facilities from undue encroachment by automobiles.

The Envision San José 2040 General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to transportation and are applicable to the proposed project.

Policy TR-1.1: Accommodate and encourage use of non-automobile transportation modes to achieve San José's mobility goals and reduce vehicle trip generation and vehicle miles traveled (VMT).

Policy TR-1.2: Consider impacts on overall mobility and all travel modes when evaluating transportation impacts of new developments or infrastructure projects.

Policy TR-1.4: Through the entitlement process for new development, fund needed transportation improvements for all transportation modes, giving first consideration to improvement of bicycling, walking and transit facilities. Encourage investments that reduce vehicle travel demand.

Policy TR-5.3: The minimum overall roadway performance during peak travel periods should be level of service "D" except for designated areas.

Policy TR-8.4: Discourage, as part of the entitlement process, the provision of parking spaces significantly above the number of spaces required by code for a given use.

Policy TR-8.6: Allow reduced parking requirements for mixed-use developments and for developments providing shared parking or a comprehensive TDM program, or developments located near major transit hubs or within Villages and Corridors and other growth areas.

Policy TR-8.9: Consider adjacent on-street and City-owned off-street parking spaces in assessing need for additional parking required for a given land use or new development.

Policy TR-9.1: Enhance, expand and maintain facilities for walking and bicycling, particularly to connect with and ensure access to transit and to provide a safe and complete alternative transportation network that facilitates non-automobile trips.

Policy CD-3.4: Encourage pedestrian cross-access connections between adjacent properties and require pedestrian and bicycle connections to streets and other public spaces, with particular attention and priority given to providing convenient access to transit facilities. Provide pedestrian and vehicular connections with cross-access easements within and between new and existing developments to encourage walking and minimize interruptions by parking areas and curb cuts.

Alviso Master Plan

The *Alviso Master Plan* includes policies applicable to all development projects within the plan area. The following policies are specific to transportation and are applicable to the proposed project.

Vehicular Circulation Policy 3: New streets serving future industrial and commercial land uses should minimize potential negative impacts to residential and sensitive environmental areas.

Bicycle Policy 3: New commercial and industrial development should accommodate safe bicycle travel by their employees and customers.

3.13.1.2 *Existing Conditions*

This section summarizes the existing conditions for the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities. Also included are the existing levels of service of the key intersections and freeway segments in the study area.

Regional Access

Regional access to the project site is provided via State Route (SR) 237 and Interstate (I) 880.

SR 237 is a six-lane, east-west freeway that extends between Sunnyvale and Milpitas and provides access to I-880 and Highway 101 (US 101). One lane in each direction is designated as a high occupancy vehicle (HOV)/toll lane. There is a toll lane in the westbound direction between I-880 and North First Street. The freeway terminates at I-880 and transitions to Calaveras Boulevard into Milpitas. Access to the site is provided via the SR 237 interchange with Zanker Road.

I-880 is a six-lane, north-south freeway that extends north to Oakland and south to I-280 in San José, at which point it makes a transition to SR 17 to Santa Cruz. Access to the site is provided via the I-880 interchange with SR 237 and Tasman Drive.

Local Access

Local access to the site is provided via Zanker Road, North First Street, Tasman Drive, and Montague Expressway.

Zanker Road is a north-south roadway that extends south from Alviso to its termination at Old Bayshore Highway. From Los Esteros Road to SR 237, Zanker Road is a two lane roadway and is a designated Class III bike route. Between SR 237 and River Oaks Parkway, Zanker Road is a six-lane roadway. Five travel lanes, three northbound and two southbound, are provided between River Oaks Parkway and Montague Expressway. The roadway narrows to four lanes south of Montague Expressway. Access to the project site would be provided via two new roadway connections along Zanker Road. Freeway access from the project site is provided via the Zanker Road interchange with SR 237.

North First Street is a four to six-lane arterial that extends from Downtown San José to Alviso. North First Street is six-lanes between SR 237 and Tasman Drive. South of Tasman Drive, North First Street narrows to four lanes. The Santa Clara County Light Rail Transit (LRT) system operates in the median of the roadway between Downtown San José and Tasman Drive.

Tasman Drive is an east-west arterial that extends from Lawrence Expressway to I-880. The roadway is generally four lanes in the North San José area and widens to six-lanes east of McCarthy Boulevard to I-880 in Milpitas. East of I-880, the roadway transitions to Great Mall Parkway into Milpitas. The Santa Clara County LRT system operates in the median of the roadway between Sunnyvale and Milpitas.

Montague Expressway is an eight-lane, east-west expressway that extends between I-880 and US 101. Full interchanges are located at I-680, I-880, and US 101. Montague Expressway serves as the primary east-west arterial through the North San José area. In the project area, Montague Expressway includes HOV lanes. The HOV lane designation is in effect in both directions of travel during both the AM and PM peak commute hours. During other times, the lane is open to all users.

Existing Pedestrian and Bicycle Facilities

Bicycle Facilities

Bicycle facilities are comprised of paths (Class I), lanes (Class II), and routes (Class III). Bicycle paths are paved trails that are separate from roadways. Bicycle lanes are lanes on roadways designed for bicycle use by striping, pavement legends, and signs. Bicycle routes are roadways designated for bicycle use by signs only. Currently, there are Class II bike lanes on the following roadways:

- Tasman Drive – Between I-880 and Lafayette Street
- Zanker Road – Between Holger Way and Old Bayshore Highway
- Holger Way – Between North First Street and Zanker Road
- North First Street – Between Alviso Road and Brokaw Road
- McCarthy Boulevard – Between SR 237 and Dixon Landing Road

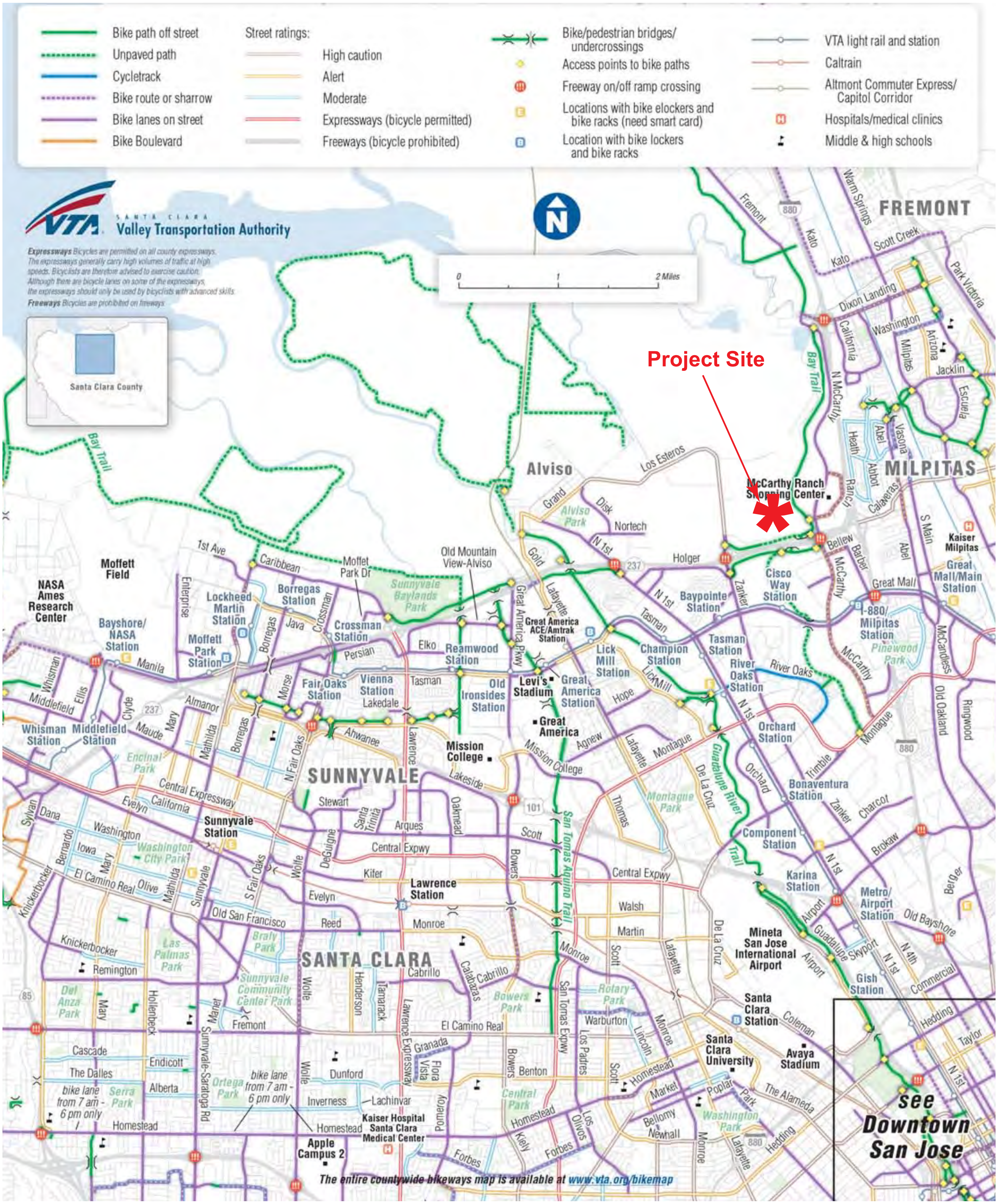
Zanker Road is also a Class III route between SR 237 and Spreckles Road in Alviso. The Coyote Creek Trail, located on the east side of Coyote Creek, is a bike path that extends from McCarthy Boulevard south to Zanker Road. Bike paths are also located on both sides of SR 237. On the north side of the roadway, the path extends from Zanker Road to Ranch Drive, which is part of the Highway 237 Bikeway Trail Program and designated as part of the San Francisco Bay Trial, the Juan Bautista De Anza National Historic Trail, and the National Recreation Trail. On the south side SR 237, the path extends from Zanker Road to McCarthy Boulevard. All existing bicycle facilities are shown in Figure 3.13-1.

Pedestrian Facilities

Pedestrian facilities in the immediate project area are limited. There are sidewalks on both sides of Zanker Road south of the SR 237 eastbound ramps. There are no sidewalks on Zanker Road north of the SR 237 westbound ramps. There are also no sidewalks on Ranch Drive between the project site and McCarthy Boulevard. The Coyote Creek Trail is located on the east side of the creek, east of the project site. San José access to the trail is currently provided on Alviso-Milpitas Road along the southern border of the site.

Existing Transit Service

Existing transit service (bus and rail) in the project area is provided by the VTA, though there is no direct transit service to the project site. VTA bus services are described in Table 3.13-1 below.



EXISTING BICYCLE FACILITIES

FIGURE 3.13-1

Table 3.13-1: VTA Bus Service in the Project Area		
Route	**Route Description**	**Daily Headway**
58	West Valley College to Alviso via North First Street.	30 min
47	Great Mall Transit Center to McCarthy Ranch via Calaveras Boulevard and McCarthy Ranch Boulevard.	30 min
140	Express Route from Fremont BART Station to Mission College via Tasman Drive.	50 min
330	Express Route from Almaden Expressway/Camden Avenue to I-880/Milpitas Light Rail Station via Tasman Drive.	30-55 min

The nearest transit facilities are located at the McCarthy Boulevard/Ranch Drive intersection (approximately 0.5 mile from the project) and the Zanker Road/Tasman Drive intersection (approximately 1.5 miles from the project site).

The nearest Light Rail Transit (LRT) station, the Baypointe LRT Station, is located along Tasman Drive at its intersection with Baypointe Parkway, approximately 1.5 miles south of the project site, and serves the Alum Rock-Santa Teresa LRT line. The Alum Rock-Santa Teresa LRT line, operates nearly 24 hours a day (4:00 AM to 2:00 AM) with 10-15-minute headways during peak commute and midday hours. The Alum Rock-Santa Teresa LRT line provides service from the Santa Teresa station in south San José, through downtown San José to North San José where it curves east and operates along the Tasman Corridor, bends south and runs along the Capitol Corridor, and ultimately terminates in east San José just south of Alum Rock Avenue.

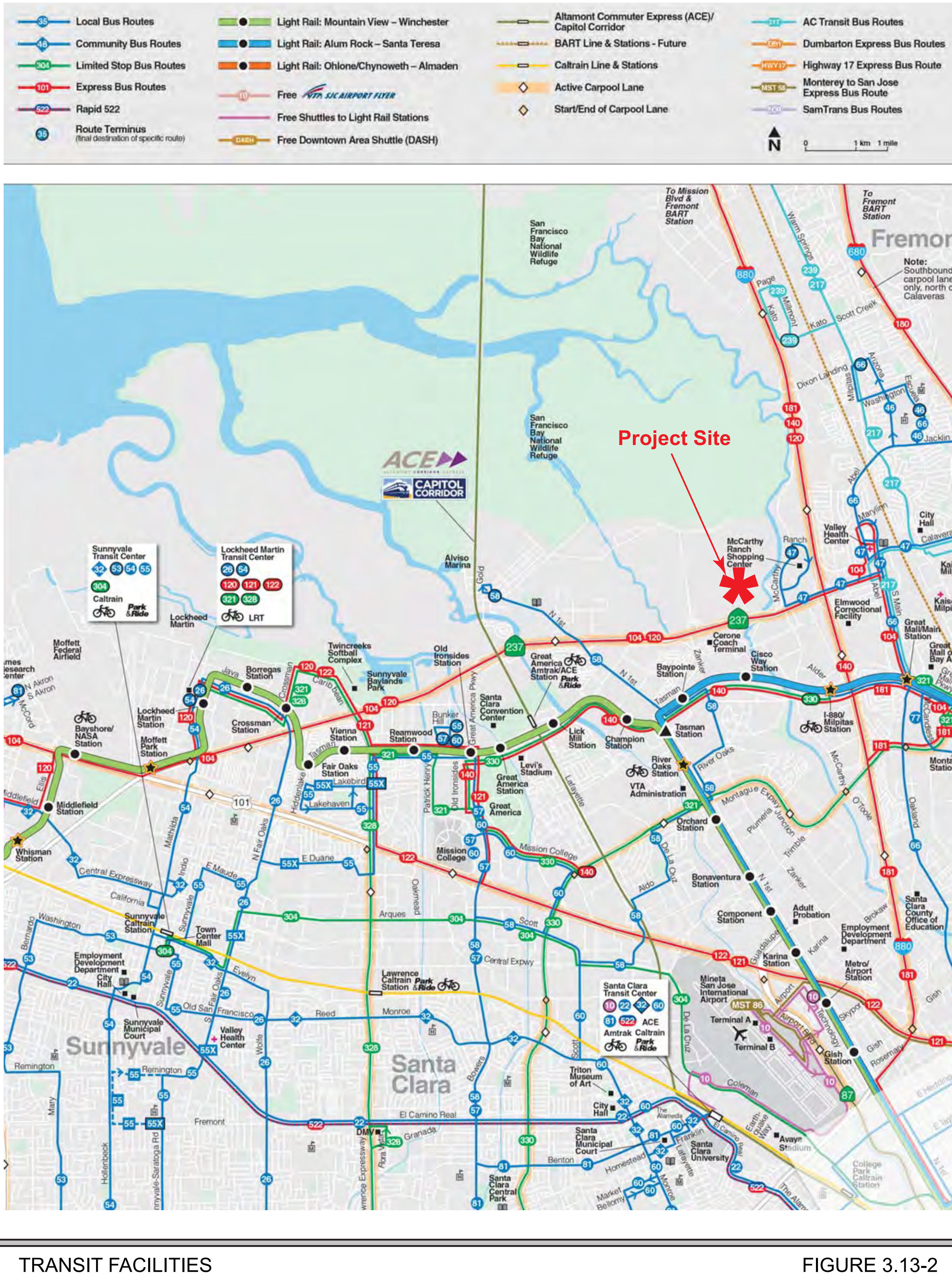
The location of area bus and train transit services are shown on Figure 3.13-2.

3.13.1.3 *Methodology*

The impacts of the proposed development were evaluated following the methodologies established by the City of San José and the Santa Clara County Congestion Management Program (CMP). Intersections were selected for study if project traffic would add at least 10 trips per lane per hour during one or more peak hours, consistent with adopted CMP methodology. Traffic conditions at all study intersections and freeway segments were analyzed for the weekday AM and PM Peak Hours. The AM Peak Hour is defined as 7:00AM and 9:00AM and the PM Peak Hour is defined as 4:00PM to 6:00PM. The peak hours represent the periods of greatest traffic congestion on a typical weekday.

Traffic conditions were evaluated under existing conditions, background conditions[69], existing plus project conditions, background plus project conditions, and cumulative conditions to determine if the level of service (LOS) of the local intersections in the project area would be adversely affected by project-generated traffic. The cumulative impact analysis is provided in Section 4.0 of this EIR. The existing traffic conditions were established based on traffic volumes from the City of San José 2014 CMP Annual Monitoring Report, previously completed traffic studies, and new manual turning-movement counts.

[69] Background conditions are existing plus approved but not yet constructed development.



TRANSIT FACILITIES

FIGURE 3.13-2

LOS is a qualitative description of operating conditions ranging from LOS A, or free-flowing conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The correlation between average delay and LOS is shown in Table 3.13-2.

Table 3.13-2: Intersection Level of Service Definitions Based on Delay

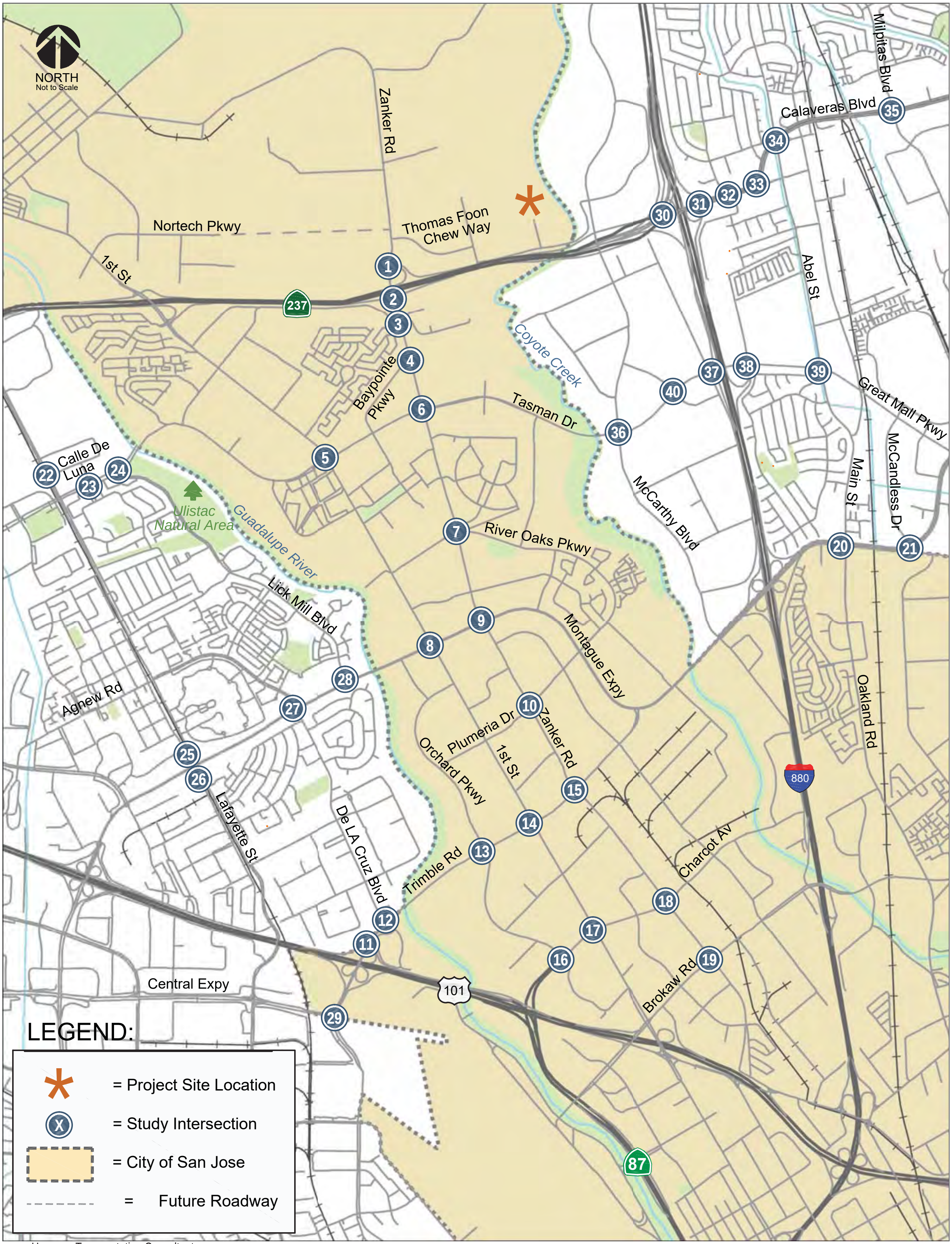
Level of Service	Description	Average Control Delay per Vehicle[70]
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	10.0 or less
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C[71] ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.0 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	Greater then 80.0

The traffic study analyzed AM and PM Peak Hour traffic conditions for 40 signalized intersections in the vicinity of the project site. The study intersections are listed in Table 3.13-3, below, and the locations of the study intersections are shown on Figure 3.13-3.

Based on the City of San José's policies, an acceptable operating level of service is defined as LOS D or better at all City controlled intersections. For County of Santa Clara and CMP intersections, an acceptable level of service is LOS E. Because the project site is very near the City boundaries with Milpitas and Santa Clara, traffic trips associated with the project site would travel through Milpitas and Santa Clara intersections as well as San José intersections. For this reason, the analysis also took into account the acceptable LOS standard for the Cities of Milpitas and Santa Clara, which is equivalent to the LOS standard established by the City of San José.

Consistent with City Council Policy 5-3[72], the City of San José LOS methodology is TRAFFIX, which is based on the 2000 *Highway Capacity Manual* method for signalized intersections.

[70] Measured in seconds.
[71] Volume to capacity ratio.
[72] City of San José Website. http://www.sanjoseca.gov/DocumentCenter/Home/View/382



Source: Hexagon Transportation Consultants

STUDY INTERSECTIONS FIGURE 3.13-3

North San Jose Area Development Policy

The North San José Area Development Policy (NSJADP) establishes a special area within the City not subject to the City standard Level of Service (LOS) Policy. The Policy instead provides the necessary traffic impact analysis for the development of an additional 26.7 million square feet of industrial use, 1.7 million square feet of supporting "local serving" commercial use, 1 million square feet of regional commercial use, 1,000 hotel rooms and 32,000 residential units within the Policy area. The specific traffic impacts of this amount of new development have been analyzed and described in the traffic analysis and Environmental Impact Report (EIR) prepared for the Policy. The Policy also includes mitigation measures identified for these impacts and establishes a mechanism for the implementation of these mitigation measures. Any new development within the Policy area that falls within the parameters of the Policy should not typically require additional review for traffic impacts except that additional analysis may be necessary to address site operational issues.

A Traffic Impact Fee is assessed on all new industrial and residential development within the Policy area that are used to fund the mitigation measures needed to meet future traffic conditions resulting from implementation of the Policy as described in the traffic analysis and Environmental Impact Report (EIR).

In 2013, the City amended the Policy to allow projects outside of the NSJADP boundaries to mitigate their impacts at intersections within the NSJADP area by payment of the North San Jose Traffic Impact Fee (TIF) if resulting levels of service for intersections in the NSJADP is consistent with the impacts identified in the North San José Development Policies Update (NSJ) EIR. The proposed project site is outside the NSJADP boundary.

The traffic analysis was completed for both Option 1 (light industrial development) and Option 2 (data center and light industrial development). Traffic impacts are also identified for the data center only (no industrial development constructed) project, where appropriate.

3.13.1.4 *Existing Intersection Operations*

Analysis of the existing intersection operations concluded that the following five intersections currently operate at an unacceptable LOS during at least one peak hour. In some cases, an intersection meets the CMP threshold LOS but not the applicable City threshold. CMP intersections are indicated with asterisks (*) below.

City of San José Intersections:

- No. 8 – North First Street and Montague Expressway* (AM and PM Peak Hour)
- No. 9 – Zanker Road and Montage Expressway (AM Peak Hour)
- No. 20 – Oakland Road and Montague Expressway* (AM and PM Peak Hour)
- No. 21 – Trade Zone Boulevard and Montague Expressway (AM and PM Peak Hour)

City of Santa Clara Intersection:

- No. 29 – De La Cruz Boulevard and Central Expressway* (PM Peak Hour)

All other study intersections currently operate at an acceptable LOS. The results of the existing conditions analysis are summarized in Table 3.13-3. Intersections that do not operate at an acceptable LOS are highlighted in bold.

Table 3.13-3: Study Intersection Level of Service – Existing Conditions				
No.	**Intersection**	**Peak Hour**	**Average Delay**	**LOS**
1	Zanker Road and SR 237 (North) - CMP/San José	AM PM	11.1 11.2	B B
2	Zanker Road and SR 237 (South) CMP/San José	AM PM	21.8 12.5	C B
3	Zanker Road and Holger Way – San José	AM PM	24.3 29.4	C C
4	Zanker Road and Baypointe Parkway – San José	AM PM	13.2 15.1	B B
5	North First Street and Tasman Drive – San José	AM PM	33.4 37.8	C D
6	Zanker Road and Tasman Drive – San José	AM PM	35.8 38.2	D D
7	Zanker Road and River Oaks Parkway – San José	AM PM	18.3 18.7	B B
8	North First Street and Montague Expressway – CMP/San José	AM PM	**87.1** **72.9**	**F** **E**
9	Zanker Road and Montague Expressway – CMP/San José	AM PM	**60.7** 51.3	**E** D
10	Zanker Road and Plumeria Drive – San José	AM PM	22.6 23.8	C C
11	Trimble Road and US 101 – San José	AM PM	19.7 12.1	B B
12	De La Cruz Boulevard and Trimble Road – CMP/San José	AM PM	33.8 48.7	C D
13	Orchard Parkway and Trimble Road – San José	AM PM	35.8 40.1	D D
14	North First Street and Trimble Road – CMP/San José	AM PM	42.3 41.1	D D
15	Zanker Road and Trimble Road – CMP/San José	AM PM	39.1 38.3	D D
16	Orchard Parkway and Guadalupe Parkway – San José	AM PM	24.1 32.8	C C
17	North First Street and Charcot Avenue – San José	AM PM	39.6 37.3	D D
18	Zanker Road and Charcot Avenue – San José	AM PM	33.5 38.0	C D
19	Zanker Road and Brokaw Road – CMP/San José	AM PM	37.0 40.9	D D
20	Old Oakland Road and Montague Expressway – CMP/San José	AM PM	**89.3** **84.8**	**F** **F**
21	Trade Zone Boulevard and Montague Expressway – CMP/San José	AM PM	**58.7** **55.1**	**E** **E**

22	Lafayette Street and Calle De Luna – Santa Clara	AM PM	14.8 18.8	B B
23	Called Del Sol and Tasman Drive – Santa Clara	AM PM	15.7 18.9	B B
24	Lick Mill Boulevard and Tasman Drive – Santa Clara	AM PM	35.1 27.7	D C
25	Lafayette Street and Montague Expressway (North) – Santa Clara	AM PM	30.6 23.7	C C
26	Lafayette Street and Montague Expressway (South) – Santa Clara	AM PM	15.1 12.5	B B
27	De La Cruz Boulevard and Montague Expressway – CMP/Santa Clara	AM PM	43.8 53.4	D D
28	Lick Mill Blvd and Montague Expressway – Santa Clara	AM PM	14.6 15.4	B B
29	De La Cruz Boulevard and Central Expressway – CMP/Santa Clara	AM PM	46.4 **95.8**	D **F**
30	I-880 SB and Calaveras Boulevard – Milpitas	AM PM	13.0 12.4	B B
31	I-880 NB and Calaveras Boulevard – Milpitas	AM PM	11.0 23.9	B C
32	Abbott Avenue and Calaveras Boulevard – Milpitas	AM PM	26.1 26.4	C C
33	Serra Way and Calaveras Boulevard – Milpitas	AM PM	16.3 22.8	B C
34	Abel Street and Calaveras Boulevard – CMP/Milpitas	AM PM	48.3 46.1	D D
35	Milpitas Boulevard and Calaveras Boulevard – CMP/Milpitas	AM PM	46.2 40.8	D D
36	McCarthy Boulevard and Tasman Drive – Milpitas	AM PM	32.4 31.4	C C
37	I-880 and Tasman Drive – Milpitas	AM PM	22.9 20.1	C C
38	I-880 and Great Mall Parkway – Milpitas	AM PM	41.0 29.0	D C
39	Abel Street and Great Mall Parkway – Milpitas	AM PM	29.1 24.0	C C
40	Alder Drive and Tasman Drive - Milpitas	AM PM	15.2 33.3	B C

3.13.1.5 *Background Intersection Operations*

Background traffic conditions represent conditions anticipated to exist after completion of the environmental review process but prior to operation of the proposed development. It takes into account planned transportation system improvements that will occur prior to implementation of the proposed project and background traffic volumes. Background peak-hour traffic volumes are calculated by adding estimated traffic from approved but not yet constructed development to the existing conditions (see Appendix K for a list of Background projects).

This traffic scenario represents a more congested traffic condition than the existing conditions scenario since it includes traffic from approved projects. The background conditions analysis is consistent with City of San José policy for transportation analyses though it is not required under CEQA, as it is neither a project scenario nor cumulative analysis but represents conditions anticipated to exist at the time the project is built and operational.

Changes to the Roadway Network

This analysis assumes that the transportation network under background conditions would be the same as the existing transportation network.

Background Intersection Level of Service

The LOS of the study intersections was calculated under background conditions, which is defined as the conditions just prior to completion of the proposed project. The background scenario predicts a realistic traffic condition that would occur as approved development get built and occupied. Analysis of the background intersection operations concluded that the following 10 intersections would operate at an unacceptable LOS. CMP intersections are shown with asterisks (*).

City of San José Intersections:

- No. 8 – North First Street and Montague Expressway* (AM and PM Peak Hour)
- No. 9 – Zanker Road and Montage Expressway* (AM and PM Peak Hour)
- No. 12 – De La Cruz Boulevard and Trimble Road* (PM Peak Hour)
- No. 17 – North First Street and Charcot Avenue (AM Peak Hour)
- No. 18 – Zanker Road and Charcot Avenue (PM Peak Hour)
- No. 20 – Oakland Road and Montague Expressway* (AM and PM Peak Hour)
- No. 21 – Trade Zone Boulevard and Montague Expressway* (AM and PM Peak Hour)

City of Santa Clara Intersections:

- No. 27 – De La Cruz Boulevard and Montague Expressway* (AM and PM Peak Hour)
- No. 29 – De La Cruz Boulevard and Central Expressway* (PM Peak Hour)

City of Milpitas Intersection:

- No. 40 – Alder Drive and Tasman Drive (PM Peak Hour)

All other study intersections would operate at an acceptable LOS. The results of the background conditions analysis are summarized in Table 3.13-4 below.

Table 3.13-4: Background Intersection Levels of Service						
No.	**Intersection**	**Peak Hour**	**Existing**		**Background**	
			Delay	**LOS**	**Delay**	**LOS**
1	Zanker Road and SR 237 (North) - CMP/San José	AM PM	11.1 11.2	B B	11.2 13.8	B B
2	Zanker Road and SR 237 (South) CMP/San José	AM PM	21.8 12.5	C B	22.2 14.0	C B
3	Zanker Road and Holger Way – San José	AM PM	24.3 29.4	C C	26.7 30.5	C C
4	Zanker Road and Baypointe Parkway – San José	AM PM	13.2 15.1	B B	13.2 15.1	B B
5	North First Street and Tasman Drive – San José	AM PM	33.4 37.8	C D	35.3 41.8	D D
6	Zanker Road and Tasman Drive – San José	AM PM	35.8 38.2	D D	41.4 39.7	D D
7	Zanker Road and River Oaks Parkway – San José	AM PM	18.3 18.7	B B	18.9 18.2	B B
8	North First Street and Montague Expressway – CMP/San José	AM PM	**87.1** **72.9**	**F** **E**	**131.6** **105.9**	**F** **F**
9	Zanker Road and Montague Expressway – CMP/San José	AM PM	**60.7** 51.3	**E** D	**66.6** **70.7**	**E** **E**
10	Zanker Road and Plumeria Drive – San José	AM PM	22.6 23.8	C C	25.2 26.1	C C
11	Trimble Road and US 101 – San José	AM PM	19.7 12.1	B B	28.1 15.5	C B
12	De La Cruz Boulevard and Trimble Road – CMP/San José	AM PM	33.8 48.7	C D	31.7 **84.0**	C **F**
13	Orchard Parkway and Trimble Road – San José	AM PM	35.8 40.1	D D	34.7 47.3	C D
14	North First Street and Trimble Road – CMP/San José	AM PM	42.3 41.1	D D	52.4 45.3	D D
15	Zanker Road and Trimble Road – CMP/San José	AM PM	39.1 38.3	D D	41.6 44.2	D D
16	Orchard Parkway and Guadalupe Parkway – San José	AM PM	24.1 32.8	C C	34.7 39.1	C D
17	North First Street and Charcot Avenue – San José	AM PM	39.6 37.3	D D	**55.6** 41.3	**E** D
18	Zanker Road and Charcot Avenue – San José	AM PM	33.5 38.0	C D	43.7 **64.0**	D **E**
19	Zanker Road and Brokaw Road – CMP/San José	AM PM	37.0 40.9	D D	48.0 47.3	D D
20	Old Oakland Road and Montague Expressway – CMP/San José	AM PM	**89.3** **84.8**	**F** **F**	**100.4** **102.2**	**F** **F**
21	Trade Zone Boulevard and Montague Expressway – CMP/San José	AM PM	**58.7** **55.1**	**E** **E**	**63.8** **64.1**	**E** **E**
22	Lafayette Street and Calle De Luna – Santa Clara	AM PM	14.8 18.8	B B	13.8 20.3	B C
23	Called Del Sol and Tasman Drive – Santa Clara	AM PM	15.7 18.9	B B	16.4 19.0	B B

24	Lick Mill Boulevard and Tasman Drive – Santa Clara	AM PM	35.1 27.7	D C	34.5 28.1	C C
25	Lafayette Street and Montague Expressway (North) – Santa Clara	AM PM	30.6 23.7	C C	32.5 26.0	C C
26	Lafayette Street and Montague Expressway (South) – Santa Clara	AM PM	15.1 12.5	B B	12.6 12.5	B B
27	De La Cruz Boulevard and Montague Expressway – CMP/Santa Clara	AM PM	43.8 53.4	D D	**91.7** **92.7**	**F** **F**
28	Lick Mill Blvd and Montague Expressway – Santa Clara	AM PM	14.6 15.4	B B	16.1 15.3	B B
29	De La Cruz Boulevard and Central Expressway – CMP/Santa Clara	AM PM	46.4 **95.8**	D **F**	75.1 **114.0**	E **F**
30	I-880 SB and Calaveras Boulevard – Milpitas	AM PM	13.0 12.4	B B	17.4 14.8	B B
31	I-880 NB and Calaveras Boulevard – Milpitas	AM PM	11.0 23.9	B C	14.4 25.7	B C
32	Abbott Avenue and Calaveras Boulevard – Milpitas	AM PM	26.1 26.4	C C	26.2 26.1	C C
33	Serra Way and Calaveras Boulevard – Milpitas	AM PM	16.3 22.8	B C	16.3 21.9	B C
34	Abel Street and Calaveras Boulevard – CMP/Milpitas	AM PM	48.3 46.1	D D	59.6 52.1	E D
35	Milpitas Boulevard and Calaveras Boulevard – CMP/Milpitas	AM PM	46.2 40.8	D D	62.1 43.4	E D
36	McCarthy Boulevard and Tasman Drive – Milpitas	AM PM	32.4 31.4	C C	37.6 40.7	D D
37	I-880 and Tasman Drive – Milpitas	AM PM	22.9 20.1	C C	26.1 22.9	C C
38	I-880 and Great Mall Parkway – Milpitas	AM PM	41.0 29.0	D C	49.3 31.0	D C
39	Abel Street and Great Mall Parkway – Milpitas	AM PM	29.1 24.0	C C	31.0 28.4	C C
40	Alder Drive and Tasman Drive - Milpitas	AM PM	15.2 33.3	B C	25.2 **170.8**	C **F**

3.13.1.6 *Existing Freeway Operations*

Methodology

As prescribed in the CMP guidelines, the level of service for freeway segments is estimated based on vehicle density as shown in Table 3.13-5 below.

Freeway segments were evaluated as required by the CMP technical guidelines. The level of service for freeway segments is estimated based on vehicle density. The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for mixed-flow lane segments that are three lanes or wider in one direction, and a capacity of 2,200 vphpl be used for mixed-flow lane segments that are two lanes wide in one direction. A capacity of 1,650 vphpl was used for high occupancy vehicle (HOV) lanes. The CMP defines an acceptable level of service for freeway segments as LOS E or better.

Table 3.13-5: Freeway Level of Service Definitions Based on Density		
Level of Service	**Description**	**Density (vehicles/ mile/lane)**
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	0-11
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted.	>11-18
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver.	>18-26
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited.	>26-46
E	At this level, the freeway operates at or near capacity. Operations at this level are volatile, because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	>46-58
F	Vehicular flow breakdowns occur. Large queues form behind breakdown points.	>58

LOS for key freeway segments in the AM and PM Peak Hours was calculated based on the traffic volumes obtained from VTA's *2014 Monitoring and Conformance Report*. Freeways are state controlled and CMP-monitored facilities and, as a result, the minimal acceptable level of service is LOS E.

Existing LOS of Study Freeway Segments

Analysis of the existing freeway operations concluded that 12 of the 26 mixed flow study segments currently operate at an unacceptable LOS F during at least one peak hour. The results also show two directional HOV lane segments currently operate at an unacceptable LOS F during at least one peak hour. All other study freeway segments operate at an acceptable LOS under existing conditions. The existing operation of the study segments are summarized in Table 3.13-6 below.

Table 3.13-6: Study Freeway Segments Level of Service – Existing Conditions					
Freeway	**Segment**	**Direction**	**Peak Hour**	**LOS Mixed Lanes**	**LOS HOV Lanes**
SR 237	US 101 and Mathilda Avenue	EB	AM PM	D **F**	---
		WB	AM PM	D D	---
SR 237	Mathilda Avenue and North Fair Oaks Avenue	EB	AM PM	D **F**	B D
		WB	AM PM	E **F**	---

Table 3.13-6: Study Freeway Segments Level of Service – Existing Conditions					
Freeway	**Segment**	**Direction**	**Peak Hour**	**LOS Mixed Lanes**	**LOS HOV Lanes**
SR 237	North Fair Oaks Avenue and Lawrence Expressway	EB	AM PM	D **F**	B D
		WB	AM PM	E D	D C
SR 237	Lawrence Expressway and Great America Parkway	EB	AM PM	D **F**	B E
		WB	AM PM	D D	C B
SR 237	Great America Parkway and North First Street	EB	AM PM	D **F**	B E
		WB	AM PM	E D	D B
SR 237	North First Street and Zanker Road	EB	AM PM	D **F**	C E
		WB	AM PM	E E	D C
SR 237	Zanker Road and McCarthy Boulevard	EB	AM PM	D E	B D
		WB	AM PM	**F** **F**	E A
SR 237	McCarthy Boulevard and I-880	EB	AM PM	C **F**	A D
		WB	AM PM	**F** C	**F** A
I-880	US 101 and East Brokaw Road	NB	AM PM	D D	B A
		SB	AM PM	**F** **F**	D E
I-880	East Brokaw Road and Montague Expressway	NB	AM PM	D D	A C
		SB	AM PM	C **F**	A D
I-880	Montague Expressway and Great Mall Parkway	NB	AM PM	C D	B C
		SB	AM PM	D D	B C
I-880	Great Mall Parkway and SR 237	NB	AM PM	C D	C B
		SB	AM PM	E C	C B
I-880	SR 237 and Dixon Landing Road	NB	AM PM	C **F**	A E
		SB	AM PM	E D	**F** B

3.13.2 Transportation/Traffic Impacts

3.13.2.1 *Thresholds of Significance*

For the purposes of this EIR, a transportation/traffic impact is considered significant if the project would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance of safety of such facilities.

3.13.2.2 *Impact Criteria*

City of San José – Local Signalized Intersections

Based on City of San José criteria, a project would cause a significant impact at a signalized intersection if the additional project traffic caused one of the following:

- The level of service at any local intersection to degrade from an acceptable LOS D or better under existing or background conditions to an unacceptable LOS E or F under existing plus project or background plus project conditions; or

- At any local intersection that is already an unacceptable LOS E or F under existing or background conditions, cause the critical-movement delay at the intersection to increase by four or more seconds and the demand-to-capacity ratio (V/C) to increase by .01 or more.

CMP and Santa Clara County Expressway Intersections

Based on CMP criteria, a project fails to meet the CMP or Santa Clara County Expressway intersection standard if the additional project traffic caused one of the following:

- Cause the level of service at any CMP/County intersection to degrade from an acceptable LOS E or better under existing or background conditions to an unacceptable LOS F under existing plus project or background plus project conditions; or

- At any CMP/County intersection that is already an unacceptable LOS F under existing or background conditions, cause the critical-movement delay at the intersection to increase by four or more seconds and the demand-to-capacity ratio (V/C) to increase by .01 or more.

Cities of Milpitas and Santa Clara Definition of Significant Intersection Impacts

The project is said to create a significant adverse impact on traffic conditions at a signalized intersection in the Cities of Milpitas and Santa Clara if for either peak hour:

- The level of service at the intersection degrades from an acceptable level (LOS D or better at all city-controlled intersections and LOS E or better at all expressway intersections) under background conditions to an unacceptable level (LOS E or F at city-controlled intersections and LOS F at expressway intersections) under project conditions, or

- The level of service at the intersection is an unacceptable level (LOS E or F at city-controlled intersections and LOS F at expressway intersections) under background conditions and the addition of project trips causes the average critical delay to increase by four (4) or more seconds *and* the volume-to-capacity ratio (V/C) to increase by one percent (.01) or more.

An exception to this rule applies when the addition of project traffic reduces the amount of average stopped delay for critical movements (i.e., the change in average stopped delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by .01 or more. A significant impact by City of Milpitas and Santa Clara standards is said to be satisfactory mitigated when measures are implemented that would restore intersection levels of operation to background conditions or better.

CMP – Freeway Segments

Based on CMP criteria, a project would cause a significant impact to a freeway segment if the additional project traffic caused one of the following:

- Cause the level of service on any freeway segment to degrade from an acceptable LOS E or better under existing or background conditions to an unacceptable LOS F under existing plus project or background plus project conditions; or

- Add more than one percent of the existing freeway capacity to any freeway segment operating at LOS F under existing or background conditions.

3.13.2.3 *Consistency with Plans*

As discussed below, the proposed project would have a significant impact on three San José and County Expressway intersections and 10 directional freeway segments. Mitigation has been identified for two of the intersections to reduce the impact to a less than significant level. The remaining intersection impact and the freeway impacts would be significant and unavoidable.

The project would place new jobs in proximity to existing transit, housing, and services, consistent with the General Plan. The impacts of the proposed new roadways would be primarily related to biological resources and subsurface cultural resources, and are addressed in the relevant sections of this EIR. Bicycle facilities are currently provided throughout the project area and bicycle parking would be provided on-site. Therefore, the project is generally consistent with *Plan Bay Area,* the CMP, and General Plan Policies TR-1.1, TR-1.2, TR-1.4, TR-5.3, TR-8.4, TR-8.6, TR-8.9, TR-9.1, and CD-3.4, and Master Plan Policies *Vehicular Circulation Policy 3 and Bicycle Policy 3*.

3.13.2.4 *Trip Generation Estimates*

Traffic trips generated by the proposed project were estimated using the recommended rates from the City of San José. A summary of the project trip generation estimates is shown in Table 3.13-7 below. It is possible that the data center component would be completed prior to buildout of the industrial uses in Option 2. If this is the case, the data center uses alone would generate no more than 40 peak hour trips.

Table 3.13-7: Project Trip Generation Estimates

Land Use	Daily Trips	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Light Industrial Development Option							
Light Industrial	8,364	972	132	1,104	140	1,024	1,164
Data Center/Light Industrial Development Option							
Light Industrial	5,074	589	80	670	85	621	706
Data Center	433	21	18	39	9	31	40
Total	5,507	610	99	709	94	652	746

3.13.2.5 *Existing Plus Project Intersection Operations*

The roadway network under existing plus project conditions would be the same as the existing roadway network, except for the following improvements planned as part of the proposed project:

The construction of up to three new two-lane public streets are proposed to provide a connection from Zanker Road to the project site. The planned roadways would provide direct access to the project site as well as adjacent undeveloped parcels along the new roadways.

- A two-lane Nortech Parkway would be extended east from a new three-way intersection at Zanker Road across lands held by the City of San José to the LECEF site, as shown on Figure 2.0-5. It is expected that the roadway right-of-way would be approximately 68 feet wide.

- A two-lane northern roadway would extend east from a new intersection with Zanker Road, approximately 2,500 feet north of the SR 237 westbound ramp intersection. The roadway would traverse lands of the City of San José. This roadway would be required for both project options, but would not be constructed until after the data center is constructed.

Existing Plus Project Level of Service Analysis

Based on the trip generation estimates for the two project option, the light industrial development option would generate approximately 40 percent more peak hour trips than the data center/light industrial development option. Therefore, the following analysis is based on the light industrial development option. Where relevant, impacts resulting from the data center/light industrial development option are also noted.

The LOS of the study intersections was calculated under project conditions by adding the new project trips from the proposed development to the existing conditions. Analysis of the existing plus project intersection operations concluded that the five intersections operating at an unacceptable LOS under existing conditions would continue to operate at an unacceptable LOS in one or more peak hours with the addition of project traffic. CMP intersections are denoted with asterisks (*) below.

<u>City of San José Intersections</u>:

- No. 8 – North First Street and Montague Expressway* (AM and PM Peak Hour)
- No. 9 – Zanker Road and Montage Expressway* (AM and PM Peak Hour)
- No. 20 – Oakland Road and Montague Expressway* (AM and PM Peak Hour)
- No. 21 – Trade Zone Boulevard and Montague Expressway* (AM and PM Peak Hour)

<u>City of Santa Clara Intersections</u>:

- No. 29 – De La Cruz Boulevard and Central Expressway* (PM Peak Hour)

All other study intersections would operate at an acceptable LOS. The results of the existing plus project conditions analysis are summarized in Table 3.13-8 below.

The Existing plus Project condition could potentially occur if all development planned as part of the project was constructed and occupied prior to other approved projects in the area. It is unlikely that this condition would occur since other approved projects expected to add traffic to the study area would likely be built and occupied prior to the proposed project.

CEQA Guidelines Section 15125(a) states that the existing environmental setting will normally constitute the baseline physical conditions against which the impacts of a project are to be evaluated. The courts have held that a Lead Agency has the discretion to use an alternative baseline, as long as the exercise of discretion is supported by substantial evidence. For the analysis of traffic impacts, the City of San José and City of Santa Clara use an alternative baseline – background conditions – which includes projected traffic from approved but not yet constructed or occupied projects in addition to existing conditions.

The purpose of identifying a background condition for calculating impacts is to ensure that all possible care is taken to identify the actual capacity of the roadways that will be available to accommodate any newly proposed development projects. This methodology also more accurately characterizes the real world conditions under which the newly proposed project would be implemented, should it be approved. For this reason and those stated above, the Cities of San José and Santa Clara mitigate impacts of the Background plus Project condition and the following discussion of Existing plus Project conditions is for informational purposes only.

Table 3.13-8: Existing Plus Project Intersections Level of Service								
No.	Intersection	Peak Hour	Existing		Existing Plus Project			
			Delay	LOS	Delay	LOS	Critical Delay	V/C
1	Zanker Road and SR 237 (North) - CMP/San José	AM PM	11.1 11.2	B B	15.9 17.1	B B	7.2 8.0	0.446 0.640
2	Zanker Road and SR 237 (South) CMP/San José	AM PM	21.8 12.5	C B	22.6 16.5	C B	1.6 7.6	0.111 0.342
3	Zanker Road and Holger Way – San José	AM PM	24.3 29.4	C C	23.0 30.6	C C	0.0 0.2	0.000 0.011
4	Zanker Road and Baypointe Parkway – San José	AM PM	13.2 15.1	B B	12.4 14.3	B B	-0.2 1.1	0.072 0.032
5	North First Street and Tasman Drive – San José	AM PM	33.4 37.8	C D	33.5 38.9	C D	0.0 2.1	0.001 0.034
6	Zanker Road and Tasman Drive – San José	AM PM	35.8 38.2	D D	44.6 38.6	D D	13.4 0.9	0.110 0.021
7	Zanker Road and River Oaks Parkway – San José	AM PM	18.3 18.7	B B	17.1 18.1	B B	-1.9 -1.2	0.066 0.070
8	North First Street and Montague Expressway – CMP/San José	AM PM	**87.1** **72.9**	**F** **E**	**87.5** **73.9**	**F** **E**	**1.4** **0.6**	**0.005** **0.007**
9	Zanker Road and Montague Expressway – CMP/San José	AM PM	**60.7** 51.3	**E** D	**64.3** **62.5**	**E** **E**	**5.4** **20.1**	**0.069** **0.070**
10	Zanker Road and Plumeria Drive – San José	AM PM	22.6 23.8	C C	21.6 23.2	C C	-1.0 -0.7	0.032 0.033
11	Trimble Road and US 101 – San José	AM PM	19.7 12.1	B B	19.8 12.2	B B	0.3 0.1	0.008 0.014
12	De La Cruz Boulevard and Trimble Road – CMP/San José	AM PM	33.8 48.7	C D	33.5 49.3	C D	0.0 1.0	0.000 0.009
13	Orchard Parkway and Trimble Road – San José	AM PM	35.8 40.1	D D	35.8 40.2	D D	0.0 0.0	0.001 0.001
14	North First Street and Trimble Road – CMP/San José	AM PM	42.3 41.1	D D	42.3 41.2	D D	0.1 0.2	0.009 0.010
15	Zanker Road and Trimble Road – CMP/San José	AM PM	39.1 38.3	D D	40.7 38.4	D D	2.7 -0.2	0.048 0.016
16	Orchard Parkway and Guadalupe Parkway – San José	AM PM	24.1 32.8	C C	24.0 32.8	C C	0.0 0.1	0.001 0.009
17	North First Street and Charcot Avenue – San José	AM PM	39.6 37.3	D D	39.7 37.3	D D	0.3 0.1	0.010 0.015
18	Zanker Road and Charcot Avenue – San José	AM PM	33.5 38.0	C D	33.9 38.2	C D	0.6 0.2	0.021 0.011
19	Zanker Road and Brokaw Road – CMP/San José	AM PM	37.0 40.9	D D	37.5 41.0	D D	0.9 0.1	0.017 0.006
20	Old Oakland Road and Montague Expressway – CMP/San José	AM PM	**89.3** **84.8**	**F** **F**	**90.9** **86.1**	**F** **F**	**2.9** **28.2**	**0.006** **0.321**
21	Trade Zone Boulevard and Montague Expressway – CMP/San José	AM PM	**58.7** **55.1**	**E** **E**	**59.4** **55.7**	**E** **E**	**1.0** **1.2**	**0.006** **0.006**
22	Lafayette Street and Calle De Luna – Santa Clara	AM PM	14.8 18.8	B B	14.7 19.5	B B	0.0 0.7	0.014 0.013
23	Called Del Sol and Tasman Drive – Santa Clara	AM PM	15.7 18.9	B B	17.1 19.0	B B	1.3 0.2	0.023 0.004

Table 3.13-8: Existing Plus Project Intersections Level of Service								
No.	**Intersection**	**Peak Hour**	**Existing**		**Existing Plus Project**			
			Delay	**LOS**	**Delay**	**LOS**	**Critical Delay**	**V/C**
24	Lick Mill Boulevard and Tasman Drive – Santa Clara	AM PM	35.1 27.7	D C	35.3 27.4	D C	0.2 0.0	0.001 0.002
25	Lafayette Street and Montague Expressway (North) – Santa Clara	AM PM	30.6 23.7	C C	30.6 24.4	C C	-0.1 0.9	0.003 0.006
26	Lafayette Street and Montague Expressway (South) – Santa Clara	AM PM	15.1 12.5	B B	14.9 12.4	B B	-0.2 -0.2	0.003 0.006
27	De La Cruz Boulevard and Montague Expressway – CMP/Santa Clara	AM PM	43.8 53.4	D D	43.9 54.2	D D	0.2 0.9	0.002 0.015
28	Lick Mill Blvd and Montague Expressway – Santa Clara	AM PM	14.6 15.4	B B	14.3 15.3	B B	-0.4 -0.5	0.017 0.018
29	De La Cruz Boulevard and Central Expressway – CMP/Santa Clara	AM PM	46.4 **95.8**	D **F**	46.2 **97.4**	D **F**	0.0 **0.0**	0.001 **0.000**
30	I-880 SB and Calaveras Boulevard – Milpitas	AM PM	13.0 12.4	B B	12.3 12.3	B B	-0.8 -0.1	0.060 0.013
31	I-880 NB and Calaveras Boulevard – Milpitas	AM PM	11.0 23.9	B C	15.0 24.2	B C	4.3 0.5	0.090 0.017
32	Abbott Avenue and Calaveras Boulevard – Milpitas	AM PM	26.1 26.4	C C	26.2 26.3	C C	0.1 0.0	0.013 0.002
33	Serra Way and Calaveras Boulevard – Milpitas	AM PM	16.3 22.8	B C	16.3 22.7	B C	0.1 -0.1	0.013 0.014
34	Abel Street and Calaveras Boulevard – CMP/Milpitas	AM PM	48.3 46.1	D D	49.7 46.4	D D	2.3 0.5	0.023 0.012
35	Milpitas Boulevard and Calaveras Boulevard – CMP/Milpitas	AM PM	46.2 40.8	D D	48.5 40.9	D D	3.5 0.2	0.018 0.006
36	McCarthy Boulevard and Tasman Drive – Milpitas	AM PM	32.4 31.4	C C	32.6 30.3	C C	0.2 -10.6	0.014 -0.004
37	I-880 and Tasman Drive – Milpitas	AM PM	22.9 20.1	C C	23.0 20.0	C C	0.2 0.0	0.008 0.008
38	I-880 and Great Mall Parkway – Milpitas	AM PM	41.0 29.0	D C	41.4 28.9	D C	0.2 -0.1	0.008 0.008
39	Abel Street and Great Mall Parkway – Milpitas	AM PM	29.1 24.0	C C	29.7 24.1	C C	0.9 0.0	0.017 0.006
40	Alder Drive and Tasman Drive - Milpitas	AM PM	15.2 33.3	B C	15.3 33.7	B C	0.2 0.5	0.008 0.008
*CMP Intersections								

The following intersections would operate at an unacceptable LOS under existing plus project conditions. Nevertheless, the proposed project would not have a significant impact on these intersections as discussed below.

<u>North First Street and Montague Expressway</u> would continue to operate at LOS F in the AM Peak Hour and LOS E in the PM Peak Hour, but the project would not result in a significant increase in delay.

Trade Zone Boulevard and Montague Expressway would continue to operate at LOS E in the AM and PM Peak Hours, but the project would not result in a significant increase in delay.

De La Cruz Boulevard and Central Expressway would continue to operate at LOS F in the PM Peak Hour, but the project would not result in a significant increase in delay.

Implementation of the proposed project would have a less than significant impact at these intersections during the peak hours under existing plus project conditions. **(Less Than Significant Impact)**

Zanker Road and Montague Expressway would continue to operate at LOS E in the AM Peak Hour with a 5.4 second increase in critical delay and a 0.069 increase in V/C. In addition, the LOS would degrade from D to E in the PM Peak Hour. Under the data center/light industrial development option, the LOS would degrade from D to E in the PM Peak Hour.

Oakland Road and Montague Expressway would continue to operate at LOS F in both peak hours. In the PM Peak Hour, the project would result in a 28.2 second increase in critical delay and a 0.321 increase in V/C. Under the data center/light industrial development option, the intersection would also operate at LOS F in the PM Peak Hour with a 27.5 second increase in critical delay and a 0.319 increase in V/C.

Impact TRAN-1: Implementation of the proposed project would have a significant impact on the Zanker Road/Montague Expressway and Oakland Road/Montague Expressway intersections under existing plus project conditions. The City has determined that impacts related to this option do not require mitigation. **(Significant Impact)**

3.13.2.6 *Background Plus Project Intersection Operations*

The roadway network under background plus project conditions would be the same as the roadway network under existing plus project conditions.

Background Plus Project LOS Analysis

The LOS of the study intersections was calculated under Background plus Project conditions by adding the new project trips from the proposed development to the background conditions. Analysis of the Background plus Project intersection operations concluded that the following 10 intersections would continue to operate at an unacceptable LOS. CMP Intersections are denoted with asterisks (*) below.

City of San José Intersections:

- No. 8 – North First Street and Montague Expressway* (AM and PM Peak Hour)
- No. 9 – Zanker Road and Montage Expressway* (AM and PM Peak Hour)
- No. 12 – De La Cruz Boulevard and Trimble Road* (PM Peak Hour)
- No. 17 – North First Street and Charcot Avenue (AM Peak Hour)
- No. 18 – Zanker Road and Charcot Avenue (PM Peak Hour)

- No. 20 – Oakland Road and Montague Expressway* (AM and PM Peak Hour)
- No. 21 – Trade Zone Boulevard and Montague Expressway* (AM and PM Peak Hour)

City of Santa Clara Intersections:

- No. 27 – De La Cruz Boulevard and Montague Expressway* (AM and PM Peak Hour)
- No. 29 – De La Cruz Boulevard and Central Expressway* (PM Peak Hour)

City of Milpitas Intersection:

- No. 40 – Alder Drive and Tasman Drive (PM Peak Hour)

The Background plus Project scenario includes the construction of the roadways described in the project description, including the Nortech Parkway Extension, a new roadway approximately 1,500 feet north of the Nortech Parkway Extension, and a north/south roadway to link the two as shown on Figure 2.0-5. The roadways necessary for the construction of the data center would be constructed first; however, all roadways would be needed for full build-out of Options 1 and 2.

All other study intersections would operate at an acceptable LOS. Construction of the data center only (Phase 1 of Option 2) would not result in the impacts at the Background plus Project condition, as it would generate no more than 40 peak hour trips. The results of the background plus project analysis are summarized in Table 3.13-9 below.

Table 3.13-9: Background Plus Project Intersections Level of Service

No.	Intersection	Peak Hour	Background		Background Plus Project			
			Delay	LOS	Delay	LOS	Critical Delay	V/C
1	Zanker Road and SR 237 (North) - CMP/San José	AM PM	11.2 13.8	B B	17.7 29.8	B C	9.6 23.7	0.467 0.734
2	Zanker Road and SR 237 (South) CMP/San José	AM PM	22.2 14.0	C B	23.1 21.2	C C	1.9 12.5	0.111 0.342
3	Zanker Road and Holger Way – San José	AM PM	26.7 30.5	C C	25.8 31.6	C C	0.0 2.9	0.000 0.076
4	Zanker Road and Baypointe Parkway – San José	AM PM	13.2 15.1	B B	12.4 14.3	B B	-0.2 1.1	0.072 0.032
5	North First Street and Tasman Drive – San José	AM PM	35.3 41.8	D D	35.3 43.4	D D	0.1 2.5	0.001 0.034
6	Zanker Road and Tasman Drive – San José	AM PM	41.4 39.7	D D	54.6 40.2	D D	22.3 2.0	0.110 0.023
7	Zanker Road and River Oaks Parkway – San José	AM PM	18.9 18.2	B B	17.9 17.7	B B	-1.4 -0.7	0.066 0.070
8	North First Street and Montague Expressway – CMP/San José	AM PM	**131.6** **105.9**	**F** **F**	**132.1** **108.2**	**F** **F**	**2.1** **6.5**	**0.005** **0.018**
9	Zanker Road and Montague Expressway – CMP/San José	AM PM	**66.6** **70.7**	**E** **E**	**74.7** **90.7**	**E** **F**	**13.5** **33.0**	**0.069** **0.070**
10	Zanker Road and Plumeria Drive – San José	AM PM	25.2 26.1	C C	24.5 25.8	C C	-0.6 -0.3	0.032 0.033

Table 3.13-9: Background Plus Project Intersections Level of Service								
No.	**Intersection**	**Peak Hour**	**Background**		**Background Plus Project**			
			Delay	**LOS**	**Delay**	**LOS**	**Critical Delay**	**V/C**
11	Trimble Road and US 101 – San José	AM PM	28.1 15.5	C B	29.2 16.2	C B	1.6 0.9	0.008 0.014
12	De La Cruz Boulevard and Trimble Road – CMP/San José	AM PM	31.7 **84.0**	C **F**	31.6 **86.7**	C **F**	0.0 **3.7**	0.000 **0.009**
13	Orchard Parkway and Trimble Road – San José	AM PM	34.7 47.3	C D	34.6 47.4	C D	0.0 0.0	0.000 0.000
14	North First Street and Trimble Road – CMP/San José	AM PM	52.4 45.3	D D	53.0 45.7	D D	0.8 0.5	0.009 0.010
15	Zanker Road and Trimble Road – CMP/San José	AM PM	41.6 44.2	D D	43.5 44.8	D D	3.2 0.8	0.048 0.016
16	Orchard Parkway and Guadalupe Parkway – San José	AM PM	34.7 39.1	C D	34.9 39.5	C D	0.4 0.6	0.009 0.009
17	North First Street and Charcot Avenue – San José	AM PM	**55.6** 41.3	**E** D	**57.0** 41.6	**E** D	**2.3** 0.4	**0.010** 0.009
18	Zanker Road and Charcot Avenue – San José	AM PM	43.7 **64.0**	D **E**	45.0 **66.0**	D **E**	1.9 **3.2**	0.021 **0.011**
19	Zanker Road and Brokaw Road – CMP/San José	AM PM	48.0 47.3	D D	49.3 47.6	D D	2.8 0.4	0.017 0.006
20	Old Oakland Road and Montague Expressway – CMP/San José	AM PM	**100.4** **102.2**	**F** **F**	**102.4** **104.3**	**F** **F**	**2.8** **3.1**	**0.006** **0.006**
21	Trade Zone Boulevard and Montague Expressway – CMP/San José	AM PM	**63.8** **64.1**	**E** **E**	**64.7** **65.0**	**E** **E**	**1.2** **1.8**	**0.006** **0.006**
22	Lafayette Street and Calle De Luna – Santa Clara	AM PM	13.8 20.3	B C	13.8 20.9	B C	0.0 0.5	0.014 0.013
23	Called Del Sol and Tasman Drive – Santa Clara	AM PM	16.4 19.0	B B	17.6 19.2	B B	1.1 0.2	0.022 0.004
24	Lick Mill Boulevard and Tasman Drive – Santa Clara	AM PM	34.5 28.1	C C	34.6 27.9	C C	0.2 0.0	0.001 0.002
25	Lafayette Street and Montague Expressway (North) – Santa Clara	AM PM	32.5 26.0	C C	32.5 26.6	C C	-0.1 0.7	0.003 0.006
26	Lafayette Street and Montague Expressway (South) – Santa Clara	AM PM	12.6 12.5	B B	12.5 12.5	B B	-0.1 -0.1	0.003 0.006
27	De La Cruz Boulevard and Montague Expressway – CMP/Santa Clara	AM PM	**91.7** **92.7**	**F** **F**	**92.2** **97.2**	**F** **F**	**1.4** **1.9**	**0.002** **0.009**
28	Lick Mill Blvd and Montague Expressway – Santa Clara	AM PM	16.1 15.3	B B	15.8 15.3	B B	-0.3 -0.2	0.017 0.018
29	De La Cruz Boulevard and Central Expressway – CMP/Santa Clara	AM PM	75.1 **114.0**	E **F**	74.7 **115.5**	E **F**	-0.1 **0.0**	0.001 **0.000**
30	I-880 SB and Calaveras Boulevard – Milpitas	AM PM	17.4 14.8	B B	17.4 14.8	B B	0.0 0.0	0.060 0.013
31	I-880 NB and Calaveras Boulevard – Milpitas	AM PM	14.4 25.7	B C	18.7 26.3	B C	4.9 0.9	0.092 0.017
32	Abbott Avenue and Calaveras Boulevard – Milpitas	AM PM	26.2 26.1	C C	26.4 26.1	C C	0.3 0.0	0.013 0.002

Table 3.13-9: Background Plus Project Intersections Level of Service								
No.	Intersection	Peak Hour	Background		Background Plus Project			
			Delay	LOS	Delay	LOS	Critical Delay	V/C
33	Serra Way and Calaveras Boulevard – Milpitas	AM PM	16.3 21.9	B C	16.4 22.0	B C	0.2 0.1	0.013 0.014
34	Abel Street and Calaveras Boulevard – CMP/Milpitas	AM PM	59.6 52.1	E D	63.3 53.3	E D	6.2 1.8	0.023 0.012
35	Milpitas Boulevard and Calaveras Boulevard – CMP/Milpitas	AM PM	62.1 43.4	E D	66.1 43.6	E D	6.2 0.4	0.018 0.006
36	McCarthy Boulevard and Tasman Drive – Milpitas	AM PM	37.6 40.7	D D	37.9 40.9	D D	0.4 0.1	0.014 0.001
37	I-880 and Tasman Drive – Milpitas	AM PM	26.1 22.9	C C	26.4 22.9	C C	0.6 0.0	0.008 0.000
38	I-880 and Great Mall Parkway – Milpitas	AM PM	49.3 31.0	D C	50.0 31.0	D C	0.9 0.0	0.008 0.008
39	Abel Street and Great Mall Parkway – Milpitas	AM PM	31.0 28.4	C C	31.9 28.6	C C	1.4 0.3	0.017 0.006
40	Alder Drive and Tasman Drive - Milpitas	AM PM	25.2 **170.8**	C **F**	25.7 **173.7**	C **F**	0.7 **3.6**	0.008 **0.008**

De La Cruz Boulevard and Trimble Road would continue to operate at LOS F in the PM Peak Hour, but the project would not result in a significant increase in critical delay and V/C.

North First Street and Charcot Avenue would continue to operate at LOS E in the AM Peak Hour, but the project would not result in a significant increase in critical delay and V/C.

Zanker Road and Charcot Avenue would continue to operate at LOS E in the PM Peak Hour, but the project would not result in a significant increase in critical delay and V/C.

Oakland Road and Montague Expressway would continue to operate at LOS F in the AM and PM Peak Hours, but the project would not result in a significant increase in critical delay and V/C.

Trade Zone Boulevard and Montague Expressway would continue to operate at LOS E in the AM and PM Peak Hours, but the project would not result in a significant increase in critical delay and V/C.

De La Cruz Boulevard and Montague Expressway would continue to operate at LOS F in the AM and PM Peak Hours, but the project would not result in a significant increase in critical delay and V/C.

De La Cruz Boulevard and Central Expressway would continue to operate at LOS F in the PM Peak Hour, but the project would not result in a significant increase in critical delay and V/C.

Alder Drive and Tasman Drive would continue to operate at LOS F in the PM Peak Hour, but the project would not result in a significant increase in critical delay and V/C.

Implementation of the proposed project would have a less than significant impact at these intersections during the peak hours under background plus project conditions. **(Less Than Significant Impact)**

North First Street and Montague Expressway would continue to operate at LOS F in the PM Peak Hour with a 6.5 second increase in critical delay and a 0.018 increase in V/C.

Under the data center/light industrial development option (Option 2), the intersection would also operate at LOS F in the PM Peak Hour with a 4.1 second increase in critical delay and a 0.011 increase in V/C.

Zanker Road and Montague Expressway would continue to operate at LOS E in the AM Peak Hour and LOS F in the PM Peak Hour. The project would result in a 13.5 second increase in critical delay and a 0.069 increase in V/C in the AM Peak Hour. In the PM Peak Hour, the project would result in a 33.0 second increase in critical delay and a 0.070 increase in V/C.

Under the data center/light industrial development option, the intersection would also operate at LOS E in the AM Peak Hour with a 6.8 second increase in critical delay and a 0.043 increase in V/C. In the PM Peak Hour, the intersection would operate at LOS F with a 20.3 second increase in critical delay and a 0.044 increase in V/C. Implementation of Phase 1 of Option 2 only (data center development) would not result in this impact.

Implementation of the proposed project would have a significant impact on the North First Street/Montague Expressway and Zanker Road/Montague Expressway intersections under background plus project conditions. These intersections are located within the North San José Area Development Policy (NSJADP) that establishes a special area within the City not subject to the City's standard Level of Service (LOS) Policy. As a condition of project approval for Option 1 and Phase 2 of Option 2, consistent with the NSJADP, the project applicant shall be required to pay the applicable impact fees toward the improvements as identified below.

North First Street/Montague Expressway: The intersection is part of the identified Montague Expressway improvements, including road widening, that are being funded by the North San José Area Development Policy (NSJADP) traffic impact fee.

Zanker Road and Montague Expressway: The intersection is part of the identified Montague Expressway improvements to be funded by NSJADP traffic impact fees. Improvements at this particular intersection also include the addition of a second northbound and southbound turn lane.

The payment of NSJADP fees would reduce the impacts at these two intersections to a less than significant level. These fees are not required for construction of Phase 1 of Option 2 (data center only). **(Less than Significant Impact)**

3.13.2.7 *Background Plus Project Freeway Segment Operations*

Freeway segments were analyzed during AM and PM Peak Hours to calculate the amount of project traffic projected to be added to the nearby freeways.

Analysis of the existing plus project freeway operations (Tables 9 and 10 of Appendix K) concluded that the proposed project would increase traffic volumes by more than one percent on the mixed-flow lanes of 13 of the 26 directional freeway segments and HOV lanes of three freeway segments (listed below) previously identified as operating at LOS F in at least one direction during at least one of the peak hours of traffic under existing conditions. Development of Phase 1 of Option 2 (data center only) would not result in impacts to any freeway segments.

Mixed-Flow Freeway Segments

1. Eastbound SR 237 between US 101 and Mathilda Avenue (PM Peak Hour)
2. Eastbound SR 237 between Mathilda Avenue and N. Fair Oaks Avenue (PM Peak Hour)
3. Eastbound SR 237 between N. Fair Oaks Avenue and Lawrence Expressway (PM Peak Hour)
4. Eastbound SR 237 between Lawrence Expwy. and Great America Parkway (PM Peak Hour)
5. Eastbound SR 237 between Great America Parkway and North First Street (PM Peak Hour)
6. Eastbound SR 237 between North First Street and Zanker Road (PM Peak Hour)
8. Eastbound SR 237 between McCarthy Boulevard and I-880 (PM Peak Hour)
13. Northbound I-880 between SR 237 and Dixon Landing Road (PM Peak Hour)
17. Southbound I-880 between Montague Expressway and E. Brokaw Road (PM Peak Hour)
18. Southbound I-880 between E. Brokaw Road and US 101(AM & PM Peak Hours)
19. Westbound SR 237 between I-880 and McCarthy Boulevard (AM Peak Hour)
20. Westbound SR 237 between McCarthy Boulevard and Zanker Road (AM & PM Peak Hours)
25. Westbound SR 237 between N. Fair Oaks Avenue and Mathilda Avenue (PM Peak Hour)

HOV Freeway Segments

13. Northbound I-880 between SR 237 and Dixon Landing Road (PM Peak Hour)
14. Southbound I-880 between Dixon Landing Road and SR 237 (AM Peak Hour)
19. Westbound SR 237 between I-880 and McCarthy Boulevard (AM Peak Hour)

Impact TRAN-2: Implementation of the proposed project would have a significant impact on the mixed-flow lanes of seven directional freeway segments and HOV lanes of three directional freeway segments. Phase 1 of Option 2 (data center construction only) would not result in this impact. **(Significant Impact)**

3.13.2.8 *Pedestrian/Bicycle Facilities and Transit Operations*

Pedestrian and Bicycle Facilities

<u>Pedestrian Facilities</u>

As previously noted, pedestrian facilities in the project area are limited, with no sidewalks on the roadways immediately adjacent to or in proximity to the project site. Pedestrian traffic from the project site could include future site occupants walking to/from the nearby commercial areas and bus stops on McCarthy Boulevard. Limited pedestrian traffic is expected on Zanker Road due to lack of services on that roadway; however, without adequate sidewalks, the proposed project could result in unsafe conditions for pedestrians on Zanker Road. The proposed project would include pedestrian improvements, including a sidewalk on the east side of Zanker Road.

Bicycle Facilities

While there are bicycle facilities surrounding the project site, they are discontinuous and do not provide direct links to nearby transit and services. The *San José Bike Plan 2020* and General Plan identify planned improvements to the bicycle network within the City and provide policies and goals that are intended to promote and encourage the use of multi-modal travel options and reduce the identified project impacts to the roadway system. The planned improvements to the bicycle network would provide the project site with improved connections to surrounding pedestrian/bike and transit facilities and a balanced transportation system as outlined in the General Plan goals and policies.

The *San José Bike Plan 2020* indicates that a variety of bicycle facilities are planned in the study area, some of which would benefit the project and adhere to the goals of the General Plan. Of the planned facilities, the following are relevant to the project.

Class I off-Street trails are planned for:

- Zanker Road, between SR 237 and Los Esteros Road
- Between Coyote Creek and Zanker Road, north of the project site.
- Along Coyote Creek from McCarthy Boulevard to Ranch Drive

Class II on-street bike lanes are planned for Los Esteros Road.

The proposed project would not result in unsafe conditions for bicyclists and would not preclude implementation of planned improvements. **(Less Than Significant Impact)**

Transit Operations

As previously noted, the project site is not directly served by any transit. The nearest transit stops are approximately one-half mile at the McCarthy Boulevard/Ranch Drive intersection and 1.5 miles at the Zanker Road/Tasman Drive intersection. There are no sidewalks or paths linking the project site with these transit stops.

It is estimated that only a minimal number of future employees would utilize transit due to long walking distances and lack of pedestrian facilities. The light industrial development option would increase delay to transit vehicles by less than 15 seconds per vehicle (see Table 16 of Appendix K). For the data center/light industrial development option, the transit delay would be less than 10 seconds vehicle. Thus, the proposed project would not alter existing transit facilities or conflict with the operation of existing or planned facilities. Therefore, the proposed project would have a less than significant impact on transit operations. **(Less Than Significant Impact)**

3.13.3 Planning Considerations – Operational Impacts

3.13.3.1 *Truck Traffic*

The light industrial development option (Option 1) would have the greatest number of new truck trips. Under this option, the project would include approximately 108 loading dock doors. Ultimately, the amount of new truck traffic generated by the project would be dependent on the operational characteristics of the facility such as duration of storage, hours of operation, and turnover rates. Specific operational characteristics for the project are not, however, available at this time as the project has no identified tenant. Based on the ITE, truck trips account for one to 31 percent of total weekday trips for industrial land uses, with an average of 13 percent.

Using the ITE average, it is estimated that the proposed project would generate approximately 1,087 daily truck trips. It is presumed that the majority of peak truck activities would occur outside of the peak hour of adjacent street traffic. It should be noted that the estimated 1,087 truck trips are included in and are not in addition to the project trip estimates shown in Table 3.16-7.

It is expected that the majority of truck traffic generated by the project would originate from and utilize SR 237. The project truck routes would not include Los Esteros Road into Alviso. The additional truck traffic resulting from the proposed project would not cause significant impacts to traffic flow along Zanker Road, given the relatively low vehicular volume along the roadway. The additional truck traffic generated by the project would, however, further the need to improve Zanker Road to City of San José's standards.

Corner radii and aisle widths shown on the site plans in Appendix K would be sufficient to allow for the circulation of garbage trucks, smaller delivery trucks, and fire trucks. The design of the on-site drive aisles within the parking lot would be required to conform to the City of San José design guidelines.

3.13.3.2 *Signal Warrant Analysis*

A signal warrant evaluation was completed for each of the two new public street intersections with Zanker Road. Figures 19 and 20 of Appendix K show the gross project trips for each development option at each of the proposed roadways that would provide access to the project site.

The need for signalization of an unsignalized intersection is assessed based on the Peak Hour Volume Signal Warrant, (Warrant #3 – Part B) described in the *California Manual on Uniform Traffic Control Devices*, 2014 Edition. This method makes no evaluation of intersection level of service, but simply provides an indication whether vehicular peak hour traffic volumes are currently, or would be under project conditions, sufficient to justify installation of a traffic signal.

The result of the peak hour traffic signal warrant checks for traffic conditions at the two new public street intersections with Zanker Road indicate that peak hour signal warrants would be met under background plus project conditions when these roadways are constructed.

3.13.3.3 *Parking*

Analysis of parking capacity is not an environmental issue under CEQA, however, discussion of parking requirements is provided below for information disclosure.

The San José Municipal Code (Chapter 20.90.060) details the required parking ratios for all land uses. Light industrial land uses are required to provide one space per 350 square feet of floor area and data centers are required to provide one space per 250 square feet of floor area plus one space per 5,000 square feet of floor area for computer equipment space.

The light industrial development option would be required to provide 3,422 off-street spaces. Based on the site plan, 2,621 spaces are proposed, which is 801 spaces below the City requirement. The project would be required as a condition of project approval to meet the City's parking requirement or implement a transportation demand management (TDM) plan that would sufficiently reduce the total traffic trips to/from the site to warrant the reduction in parking.

The City requires one bicycle parking space per 5,000 square feet of light industrial floor area. For data centers, the bicycle parking requirement is one space per 5,000 square feet of office floor area plus one space per 50,000 square feet of floor space for computer equipment. For the light industrial development option (Option 1), the requirement would be up to 240 bicycle parking spaces. Option 2 would include up to 240 bicycle parking spaces with 22 included on the data center portion of the site. The data center includes approximately 103 parking spaces.

3.13.4 Mitigation and Avoidance Measures for Transportation Impacts

3.13.4.1 *Freeway Segment Impacts*

There are no feasible mitigation measures available to reduce project impacts on local freeway study segments to a less than significant level as it is beyond the capacity of any one project to acquire right-of-way and add lanes to a state freeway. Furthermore, no comprehensive project to increase freeway capacity on either SR 237 or I-880 has been developed by Caltrans or VTA, so there is no identified improvement projects in which to pay fair share fees. Transportation demand management measures, if implemented, would reduce these impacts but not to a less than significant level. Therefore, the project's impacts to freeway segments would be significant and unavoidable. Phase 1 of Option 2 (data center only) would not result in this impact. **(Significant Unavoidable Impact)**

3.13.5 Conclusion

With payments into the Montague Expressway widening improvements that are being funded by the North San José Area Development Policy traffic impact fee, LOS impacts on Montague Expressway would be reduced to a less than significant level. **(Less Than Significant Impact)**

There are no feasible mitigation measures to reduce the identified freeway segments. **(Significant Unavoidable Impact)**

3.14 UTILITIES AND SERVICE SYSTEMS

The section below is partially based upon the Water Supply Assessment (WSA) prepared for the San José Municipal Water System (SJMWS) by *Schaaf & Wheeler* for the proposed project. The WSA is included as Appendix L.

3.14.1 Environmental Setting

3.14.1.1 *Regulatory Framework*

State and Regional Plans

Assembly Bill 341

Assembly Bill 341 (AB 341) builds upon AB 939, which required all municipalities to divert 25 percent of their solid waste from landfill disposal by January 1, 1995. AB 341 established a policy goal for California that not less than 75 percent of the waste generated in the state be source-reduced, recycled, or composted by the year 2020.

Senate Bill 610 & 221

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) require water retailers to demonstrate whether their water supplies are sufficient for certain proposed subdivisions and large development projects subject to CEQA. SB 610 includes the requirements for detailed water supply assessments (WSAs), and SB 221 includes the requirement for written verification of sufficient water supply based on substantial evidence. SB 610 requires that a WSA be prepared by the local water retailer and submitted within 90 days to the requesting agency. In compliance with these laws, a WSA has been completed for the project.

Local Land Use Plans and Regulations

Envision San José 2040 General Plan

The Envision San José 2040 General Plan includes infrastructure policies applicable to all development projects in San José. These policies and actions are designed to provide water supply, sanitary sewer, and storm drainage infrastructure facilities to meet future growth planned within the City and to assure high-quality service to existing and future residents while fulfilling regulatory requirements. The following policies are specific to utilities and service systems and are applicable to the proposed project.

Policy IN-3.1: Achieve minimum levels of service as follows:

- For sanitary sewers, achieve a minimum level of service “D” or better as described in the Sanitary Sewer Level of Service Policy and determined based on the guidelines provided in the Sewer Capacity Impact Analysis (SCIA) Guidelines.

- For storm drainage, to minimize flooding on public streets and to minimize the potential for property damage from stormwater, implement a 10-year return storm design standard throughout the City, and in compliance with all local, state and federal regulatory requirements.

Policy IN-3.3: Meet the water supply, sanitary sewer and storm drainage level of service objectives through an orderly process of ensuring that, before development occurs, there is adequate capacity.

Policy IN-3.4: Maintain and implement the City's Sanitary Sewer Level of Service Policy and Sewer Capacity Impact Analysis (SCIA) Guidelines to:

- Prevent sanitary sewer overflows (SSOs) due to inadequate capacity so as to ensure that the City complies with all applicable requirements of the Federal Clean Water Act and State Water Board's General Waste Discharge Requirements for Sanitary Sewer Systems and National Pollutant Discharge Elimination System permit. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters.

- Maintain reasonable excess capacity in order to protect sewers from increased rate of hydrogen sulfide corrosion and minimize odor and potential maintenance problems.

- Ensure adequate funding and timely completion of the most critically needed sewer capacity projects.

- Promote clear guidance, consistency and predictability to developers regarding the necessary sewer improvements to support development within the City.

Policy IN-3.9: Require developers to prepare drainage plans that define needed drainage improvements for proposed developments per City standards.

Policy IN-3.10: Incorporate appropriate stormwater treatment measures in development projects to achieve stormwater quality and quantity standards and objectives in compliance with the City's NPDES permit.

Policy MS-3.1: Require water-efficient landscaping, which conforms to the State's Model Water Efficient Landscape Ordinance, for all new commercial, institutional, industrial, and developer-installed residential development unless for recreation needs or other area functions.

Policy MS-3.2: Promote use of green building technology or techniques that can help to reduce the depletion of the City's potable water supply as building codes permit.

Policy MS-3.3: Promote the use of drought tolerant plants and landscaping materials for non-residential and residential uses.

Policy MS-19.1: Require new development to contribute to the cost-effectiveness expansion of the recycled water system in proportion to the extent that it receives benefit from the development of a fiscally and environmentally sustainable local water supply.

Alviso Master Plan

The *Alviso Master Plan* includes policies applicable to all development projects within the plan area. The following policies are specific to utilities and service systems and are applicable to the proposed project.

Storm Drainage Policy 1: All new development projects should be evaluated to determine the possible need for additional storm drainage facilities.

Water Supply Policy 2: To the extent feasible, new development should use the City's reclaimed water to irrigate their landscaping.

San José Municipal Code

The City's Municipal Code includes regulations associated with water conservation and water diversion. City regulations include a Green Building Ordinance (Chapter 17.84) to foster practices to minimize the use of water and other resources in the City of San José, Water Efficient Landscape Standards for New and Rehabilitated Landscaping (Chapter 15.10), and a Construction and Demolition Diversion Deposit Program that fosters recycling of construction and demolition materials (Chapter 9.10).

San José Zero Waste Strategic Plan/Green Vision

The Green Vision provides a comprehensive approach to achieve sustainability through new technology and innovation. The Zero Waste Strategic Plan outlines policies to help the City of San José foster a healthier community and achieve its Green Vision goals, including 75 percent diversion by 2013 and zero waste by 2022. The Green Vision also includes ambitious goals for economic growth, environmental sustainability, and an enhanced quality of life for San José residents and businesses.

Private Sector Green Building Policy

The City of San José's Green Building Policy (Policy 6-32) for private sector new construction encourages building owners, architects, developers, and contractors to incorporate meaningful sustainable building goals early in the building design process. This policy establishes baseline green building standards for private sector new construction and provides a framework for the implementation of these standards. It is also intended to enhance the public health, safety and welfare of San José residents, workers, and visitors by fostering practices in the design, construction, and maintenance of buildings that will minimize the use and waste of energy, water and other resources in the City of San José.

3.14.1.2 *Existing Conditions*

Water Service and Supply

The project site is currently served by well water. Potable water is provided in the project area by the San José Municipal Water System (SJMWS) and is a mix of wholesale water purchase from the San

Francisco Public Utilities Commission (SFPUC) with some backup supply available from locally produced groundwater.[73]

The California Urban Water Management Planning Act requires urban water suppliers meeting certain criteria to prepare Urban Water Management Plans on a five-year, on-going basis. SJMWS adopted its 2015 UWMP in June 2016 which predicted system-wide industrial demand of 3,894 acre feet per year (AFY) in 2020, a 1,721 AFY increase over 2015.

Water recycling (also referred to as water reclamation) is the treatment and management of wastewater to produce water of a suitable quality for beneficial non-potable uses. Recycled water service is provided to the cities of Milpitas, Santa Clara, and San José by South Bay Water Recycling (SBWR) which is operated by the San José Santa Clara Regional Wastewater Facility (RWF). SBWR maintains over 100 miles of recycled water pipelines, and delivered an average of 10.6 (million gallons per day or MGD) to customers for non-drinking uses in 2012.[74] The nearest recycled water line is parallel to Zanker Road, west of the project site. This recycled water line serves the LECEF located west of the site.

Wastewater Treatment System

The RWF provides wastewater treatment for 110 million gallons/day (MGD) from 12 neighboring cities and sanitation districts. This includes the Alviso Community, in which the proposed project is located. The RWF is located north of the project site, on both sides of Zanker Road. Several large gravity sanitary sewer trunk lines are located in Zanker Road providing the final connection to the RWF from the surrounding tributary cities and sanitation districts.

There are no existing public sanitary sewer facilities on the project site or the surrounding undeveloped land. The LECEF uses a private on-site sewer pump station to pump its effluent into the trunk lines in Zanker Road. The connection from LECEF is made at an underground vault near the intersection of Thomas Foon Chew Way and Zanker Road. The force main from LECEF's pump station up to and including the underground vault is a privately owned and maintained system.

Given that the project site is minimally developed with two residences, a mobile home, and farm-related ancillary structures, the existing uses on-site utilize a septic system for the minimal amount of wastewater currently generated.

Stormwater Drainage System

The majority of the project site is currently pervious. The existing site grading slopes generally downhill towards the north-west. Stormwater runoff currently infiltrates the pervious surfaces of the site or drains via sheet flow to the northwest corner of the property.[75] The existing Coyote Creek levee along the eastern boundary of the site prevents any drainage directly into the creek.

---

[73] SJMWS, *Water Supply Assessment for the 237 Industrial Center Project*, February 2017 (Appendix L).
[74] City of San José, Environmental Services Department. *About SBWR.* N.d. Accessed August 21, 2015. Available at: http://www.sanJoséca.gov/index.aspx?NID=1587
[75] Schaaf & Wheeler. *Memo – Storm Outfall Impacts for Cilker Property.* June 8, 2016.

Stormwater from the adjacent 40-acre LECEF and PG&E site discharges into Coyote Creek via an existing forcemain that crosses the project site. The forcemain travels through the existing levee on the west side of the creek where it outfalls to the low flow channel.

Solid Waste

Given that the project site is minimally developed with two residences, a mobile home, and farm-related accessory structures, the site currently generates a nominal amount of solid waste for collection.

Natural Gas, Electricity, and Fiber Optics

There is an existing natural gas line located south and west of the project site. Electricity is provided to the project site by PG&E via overhead utility lines. There are no fiber optics lines (high-speed data transmission) located on-site or within the general project vicinity.

3.14.2 Utilities and Service Systems Impacts

3.14.2.1 *Thresholds of Significance*

For the purposes of this EIR, a utilities and service systems impact is considered significant if the project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new waste or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Comply with federal, state, and local statutes and regulations related to solid waste.

3.14.2.2 *Consistency with Plans*

The proposed project would be built in accordance with the City's Green Building Measures, including water efficient fixtures and landscaping, use of recycled water, and recycling of solid waste. The project would extend utilities onto the project site to provide adequate electrical, natural gas, fiber optics, water, and sanitary sewer services for the proposed project. A new outfall to Coyote Creek could also be installed for stormwater runoff if it determined that extending lines to the existing Oakmead Pump Station on the Guadalupe River is not possible. Therefore, the project would be consistent with General Plan Policies IN-3.1, IN-3.3, IN-3.4, IN-3.9, IN-3.10, MS-3.1, MS-

3.2, MS-3.3, and MS-19.1, and Alviso Master Plan Policies Storm Drainage Policy 1 and Water Supply Policy 2.

3.14.2.3 *Water Supply Impacts*

The Water Supply Analysis (WSA) analyzed the amount of water required for Option 2 of the project because it would require more water associated with the data center use. The data center would use recycled water to meet cooling demand; however, a contingency of nine days of potable water use per year is factored into the analysis should the recycled water system experience an interruption. The remaining 728,000 square feet of light industrial uses would use potable and recycled water supplied by SJMWS. Water mains would be extended to the project site and City held land within existing streets and new public streets proposed as part of the project. A summary of project water demands is provided in the table below, which assumes no interruptions in recycled water supply.

Table 3.14-1: Project Water Demands

Site Use	Demand Calculation (gal/day)	Water Demand		% Recycled	Potable Demand (AFY)	Recycled Demand (AFY)
		gal/day	AFY			
Light Industrial	728,000 sq ft	131,040	146.8	20%	117.4	29.4
Data Center						
- cooling	50 MW	1,476,000	1,643.3	100%	0	1,643.3
- potable	Estimate	10,800	12.1	0%	12.1	0
	TOTALS	1,608,840	1,802	93%	129.5	1,673

As described previously, recycled water would be supplied to the site by SJMWS. A recycled water main must be extended to the site in order to provide service for project operations.

The data center's maximum daily water demand for cooling purposes is expected to be 1,467,000 gallons per day. This need would be met with recycled water. Total recycled water cooling demand for the data center would be 1,643 AFY under normal operating conditions. Emergency backup use of potable water for cooling for up to nine days per year would require 14.5 acre-feet per year (AFY).

The data center would also require an additional supply of potable water for non-cooling purposes (restrooms, administration areas, etc.) This is estimated to require 14 AFY of potable water. Combined with 14.5 AFY of potential emergency backup cooling demand, total potable water use for the data center is expected to be no more than 26.6 AFY.

The 728,000 square feet of light industrial uses would require approximately 146.8 AFY. If recycled water is used for landscape irrigation purposes, the projected potable water demand would be 117.4 AFY. Therefore, Option 2 of the proposed project would require 129.5 AFY of potable water and 1,673 AFY of recycled water.

Current and future water supplies for the SJMWS consist of imported water, local groundwater, and recycled water. According to their most recent UWMP, SJMWS in 2015 delivered 15,707 AFY of potable water system-wide. Between 2015 and 2040, demand is projected to gradually increase to 36,116 AFY as the region experiences continued development and growth in all sectors. Industrial demand for potable and raw water is expected to be 10,110 AFY by 2040.

With a projected recycled water demand of 1,643 AFY, plus 29.4 AFY for outdoor/landscaping use associated with the light industrial development, Option 2 would roughly double the amount of recycled water currently being used by industrial customers in SJMWS's service area (1,672.4 AFY). In their 2015 UWMP, SJMWS expects that system-wide use of recycled water will increase to 7,368 AFY by 2040.

SFPUC's wholesale potable water system is deemed highly reliable. SFPUC and its wholesale customers have adopted a Water Shortage Allocation Plan that allows for shortage reductions of up to 10% below normal year supplies for a single critical dry year (or the first year of a multi-year drought), and up to 22% for subsequent multiple dry years. Water use by SJMWS customers during the most recent drought (2013-2015) decreased by 17%. Industrial water usage was reduced by approximately 6%.

The projected potable water demand for Option 2 (129.5 AFY) represents approximately 2.6% increase of the 5,041 AFY currently contracted to SJMWS for delivery by SFPUC during normal water years. SJMWS has the ability to meet increased demand in a variety of ways, such as purchasing additional water from SFPUC when available, relying more heavily on local groundwater sources, or encouraging conservation and recycle water use among its existing customers to reduce existing potable water demands.

The potable demands of Option 2 fall easily within growth forecasts for industrial water use put forth in SJMWS's 2015 UWMP. Industrial water demand in all SJMWS service areas is projected to increase by 7,937 AFY between 2015 and 2040. Therefore, the 129.5 AFY needed for the project represents less than 2% of this forecasted growth.

The proposed project includes the acquisition of property for a future well site, as a public facility, to be located on property owned by the City. The Developer would work with the City to determine a pro rata fair share contribution towards this facility. While the project is not installing the well, it is believed that the location to be chosen would take into account adjacent land uses. Construction impacts from well installation would be minimal and pump operation would comply with SJMWS's UWMP.

For the reasons described above, implementation of the proposed project will not have a significant impact on existing and future potable or recycled water supplies. **(Less Than Significant Impact)**

3.14.2.4 *Sanitary Sewer/Wastewater Impacts*

The project site currently generates a nominal amount of wastewater from two residences and a mobile home on-site. Based on the utility capacity analysis prepared for the project, Option 2 would generate a wastewater discharge/blowdown peak daily volume of 488,000 GPD at a peak instantaneous rate of 410 GPM when potable water is used as a primary source.[76] When recycled water is used (at least 356 days per year), Option 2 would generate a wastewater discharge/blowdown peak daily volume of 206,000 GPD, at an instantaneous rate of 400 GPM.

[76] Ibid.

The project proposes to connect to the 84-inch sewer trunk main in Zanker Road via a proposed new regional public lift station located near the future Zanker Road/Nortech Parkway intersection.

The proposed public sanitary sewer pump station to serve the project site and future development on the east and west sides of Zanker Road (refer to Figure 2.0-4) is expected to provide a capacity of approximately seven (7) MGD and would occupy a land area of approximately 5,000 square feet. The pump station facility improvements would likely include holding tanks, sumps, redundant submersible pumps, a control building, and generators for backup power. The backup generators are anticipated to be sized at 0.5 megawatts. The public sanitary sewer pump station may connect to the underground vault system owned and operated by the LECEF, or a new connection to the gravity sewer trunk lines in Zanker Road would need to be constructed.

The project would construct gravity sanitary sewer lines that would run from the project property to the holding tanks/sumps at the new public sanitary sewer pump station. The gravity sewer lines would follow the alignment of the new public streets that would be built as part of the project's roadway infrastructure improvements.

As stated above, the City currently has approximately 38.8 MGD of excess treatment capacity at the RWF. This system has adequate capacity to accommodate the projected discharge requirements based on discussions with the City of San José.[77] In addition, the project is consistent with the General Plan and was accounted for in the planned growth of the City. Therefore, implementation of the proposed project would have a less than significant impact on the existing wastewater facilities. **(Less Than Significant Impact)**

3.14.2.5 *Storm Drainage Impacts*

The project proposes to develop approximately 64.5 acres of land with impervious surfaces including buildings and roadways. As described previously, the site currently drains via sheet flow to the northwest corner of the property, not to Coyote Creek. The proposed stormwater drainage system will be designed to accommodate approximately 121 cubic feet per second (cfs) of stormwater from the site, proposed roadways, and City held lands east of Zanker Road.

Two scenarios have been developed for the conveyance of stormwater from the 10-year rainfall event; an outfall to Coyote Creek or connection to the existing Oakmead Pump Station on the Guadalupe River. The outfall scenario would discharge flows via a forcemain into a new gravity outfall pipe at the main channel of Coyote Creek. The new outfall, if required, would be located approximately 1,800 feet downstream of the Highway 237 bridge crossing, adjacent to the existing private LECEF outfall. Stormwater flows in excess of the 10-year event would continue to sheet flow from the site to the northwest. The biological and hydrologic impacts and regulatory permit requirements of constructing the outfall are described in Section 3.3 *Biological Resources* and Section 3.9 *Hydrology and Water Quality* of this EIR.

The new outfall (if required) could discharge runoff to Coyote Creek at a rate of 28 cubic feet per second (cfs) during 10-year and 100-year storm events. Based on a discharge of 28 cfs, a 0.78 acre detention vault is proposed in the northeast corner of the site. Water in the vault during 10-year and

[77] SJC02 Utility Capacity Analysis. September 13, 2016.

100-year events would reach depths of two feet and eight feet, respectively. The vault would store 1.6 acre-feet of water during a 10-year storm and 6.0 acre-feet during a 100-year storm. It would take the 28 cfs pump 0.7 hours to drain the 10-year event and 2.6 hours to drain the 100-year event. As described in *Section 3.9 Hydrology and Water Quality,* the proposed project would be required to adhere to the Municipal Regional Stormwater NPDES permit for stormwater treatment on-site to prevent the discharge of pollutants into Coyote Creek.

Another scenario for stormwater drainage would be to connect via new and upgraded stormdrain lines to the Oakmead Pump Station located on the Guadalupe River, approximately two miles southwest of the project site. This scenario would extend new lines adjacent to the existing potable water line across lands held by the City of San José to Baytech Parkway, west of the site. The City has determined that the existing Oakmead Pump Station has capacity to accommodate stormwater flows from the proposed project and the City-held lands east of Zanker Road.

The project would be required at the implementation stage to submit a design/analysis which minimizes the rate of 10-year stormwater flows to the Oakmead Pump Station to the greatest extent possible (i.e., using a restrictor device or installing a weir for metering the flow). Analysis should also include an evaluation of the existing storm sewer system to determine if downstream storm sewer capacity upgrades are necessary.

The construction of the potential stormwater outfall or connections to the Oakmead Pump Station is included in the overall construction activities for the proposed project. As discussed in the relevant sections of this EIR, permit conditions included in the project would reduce construction impacts to a less than significant level. **(Less Than Significant Impact)**

3.14.2.6 *Solid Waste Impacts*

The proposed project would increase the total solid waste generated by the project site compared to existing conditions. The General Plan FPEIR concluded that the increase in solid waste generated by full build out under the General Plan would not cause the City to exceed the capacity of existing landfills that serve the City. Future increases in solid waste generation from development allowed under the General Plan would be avoided with ongoing implementation of the City's Zero Waste Strategic Plan. This plan, in combination with existing regulations and programs, would ensure that full build out of the General Plan would not result in significant impacts from the provision of landfill capacity to accommodate the City's increased service population.

The proposed project is consistent with the development assumptions in the General Plan. Therefore, redevelopment of the project site would have a less than significant impact on the solid waste disposal capacity. **(Less Than Significant Impact)**

3.14.3 Conclusion

For the reasons described above, implementation of the proposed project would have a less than significant impact on utilities and service systems. **(Less Than Significant Impact)**

SECTION 4.0 CUMULATIVE IMPACTS

4.1 CUMULATIVE ANALYSIS

Cumulative impacts, as defined by CEQA, refer to two or more individual effects, which when combined, compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant effects taking place over a period of time. CEQA Guideline Section 15130 states that an EIR should discuss cumulative impacts "when the project's incremental effect is cumulatively considerable." The discussion does not need to be in as great detail as is necessary for project impacts, but is to be "guided by the standards of practicality and reasonableness." The purpose of the cumulative analysis is to allow decision makers to better understand the impacts that might result from approval of past, present, and reasonably foreseeable future projects, in conjunction with the proposed project addressed in this EIR.

The CEQA Guidelines advise that a discussion of cumulative impacts should reflect both their severity and the likelihood of their occurrence. To accomplish these two objectives, the analysis should include either a list of past, present, and probable future projects or a summary of projections from an adopted general plan or similar document. The analysis must then determine whether the project's contribution to any cumulatively significant impact is cumulatively considerable, as defined by CEQA Guideline Section 15065(a)(3).

The cumulative discussion for each environmental issue addresses two aspects of cumulative impacts: 1) would the effects of all of the pending development listed result in a cumulatively significant impact on the resources in question? And, if that cumulative impact is likely to be significant, 2) would the contributions to that impact from the proposed project make a cumulatively considerable contribution to those cumulative impacts?

The following projects in the project vicinity are evaluated in the cumulative analysis.

- North San José Phase II
- America Center Office Development
- Top Golf
- City Place
- Great America Master Plan
- Bixby Project
- MCA Project

The effects of past projects are typically on the ground and reflected in the existing conditions, especially as relates to traffic, air quality, and noise.

4.1.1 <u>Cumulative Transportation Impacts</u>

Traffic volumes under cumulative conditions were estimated by adding the trips from proposed but not yet approved (pending) development projects within the City of San José to background condition traffic volumes. Cumulative plus project conditions are the cumulative no project condition plus project generated traffic.

Significance Thresholds – City of San José

As with existing plus project and background plus project, in the City of San José the proposed project would have a significant cumulative LOS impact if it would:

- cause the level of service at any local intersection to degrade from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under cumulative conditions;

- cause the level of service at any CMP/County intersection or freeway segment to degrade from an acceptable LOS E or better under background conditions to an unacceptable LOS F under cumulative conditions; or

- for any local intersection that is already an unacceptable LOS E or F under background conditions, cause the critical-movement delay at the intersection to increase by four or more seconds and the volume-to-capacity ratio (V/C) to increase by one percent (0.01) or more[78]; or

A single project's contribution to a cumulative intersection impact is deemed considerable in the City of San José if the project traffic contributes 25 percent or more to the increase in total traffic volume from background traffic conditions to cumulative traffic conditions. A significant cumulative impact is deemed mitigated to a less than significant level by the City of San José if the measures implemented would restore the intersection LOS to background conditions or better at non-protected intersections.

Significance Thresholds – City of Santa Clara

The project is said to create a significant adverse impact on traffic conditions at a signalized intersection in Santa Clara if for either peak hour:

- The level of service at the intersection degrades from an acceptable level (LOS D or better at all city-controlled intersections and LOS E or better at all expressway intersections) under cumulative no project conditions to an unacceptable level (LOS E or F at city-controlled intersections and LOS F at expressway intersections) under cumulative conditions, or

- The level of service at the intersection is an unacceptable level (LOS E or F at city-controlled intersections and LOS F at expressway intersections) under cumulative no project conditions and the addition of project trips causes the average critical delay to increase by four (4) or more seconds *and* the volume-to-capacity ratio (V/C) to increase by one percent or more. The same exception applies as noted for San José.

A significant impact by the City of Santa Clara's standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to an acceptable level or no worse than cumulative no project conditions.

[78] An exception to this threshold applies when the addition of project traffic reduces the amount of average stopped delay for critical movements (i.e., the critical movement is negative). In this case, the threshold of significance is an increase in the critical V/C of 0.01 or more.

4.1.1.1 *Changes to the Roadway Network*

This analysis assumes that the transportation network under cumulative plus project conditions would be the same as the transportation network under background conditions.

4.1.1.2 *Cumulative Intersection Level of Service Impacts*

The results of the cumulative plus project conditions analysis are summarized in Table 4.0-1 below.

Table 4.0-1: Cumulative Conditions Intersection Level of Service																
No.	Intersection	Peak Hour	Background		Cumulative No Project		Cumulative Plus Project – Light Industrial Development Option					Cumulative Plus Project – Data Center/Light Industrial Development Option				
			Delay	LOS	Delay	LOS	Delay	LOS	Critical Delay	V/C	%[79]	Delay	LOS	Critical Delay	V/C	%
1	Zanker Road and SR 237 (North) - CMP/San José	AM	11.2	B	12.2	B	24.0	C	18.8	0.595	---	15.9	B	7.5	0.417	---
		PM	13.8	B	15.1	B	**56.4**	**E**	**59.4**	**0.854**	**72**	22.6	C	14.8	0.658	
2	Zanker Road and SR 237 (South) CMP/San José	AM	22.2	C	22.7	C	24.2	C	3.3	0.165	---	23.7	C	2.7	0.129	---
		PM	14.0	B	15.5	B	36.1	D	36.0	0.466		20.8	C	11.4	0.342	
3	Zanker Road and Holger Way – San José	AM	26.7	C	27.4	C	26.4	C	3.1	0.028	---	26.7	C	3.0	0.026	---
		PM	30.5	C	30.9	C	32.1	C	3.8	0.121		31.6	C	1.0	0.051	
4	Zanker Road and Baypointe Parkway – San José	AM	13.2	B	13.1	B	12.4	B	-0.2	0.079	---	12.6	B	-0.2	0.052	---
		PM	15.1	B	14.7	B	14.0	B	0.8	0.042		14.1	B	-0.3	0.017	
5	North First Street and Tasman Drive – San José	AM	35.3	D	44.5	D	44.4	D	13.2	0.215	---	44.5	D	13.2	0.215	---
		PM	41.8	D	48.9	D	51.9	D	12.9	0.178		50.7	D	11.0	0.165	
6	Zanker Road and Tasman Drive – San José	AM	41.4	D	47.0	D	**64.8**	**E**	**41.5**	**0.173**	**41**	**57.3**	**E**	**28.5**	**0.133**	**31**
		PM	39.7	D	41.6	D	42.3	D	5.4	0.133	---	42.0	D	4.9	0.123	---
7	Zanker Road and River Oaks Parkway – San José	AM	18.9	B	19.6	B	18.9	B	**0.4**	0.134	---	19.2	B	0.7	0.109	---
		PM	18.2	B	18.1	B	17.8	B	**0.0**	0.146		17.8	B	0.1	0.121	
8	North First Street and Montague Expressway – CMP/San José	AM	**131.6**	**F**	**169.2**	**F**	**169.6**	**F**	**67.2**	**0.156**	8	**169.6**	**F**	**66.6**	**0.155**	6
		PM	**105.9**	**F**	**145.6**	**F**	**149.0**	**F**	**70.7**	**0.175**	10	**147.7**	**F**	**67.9**	**0.169**	7
9	Zanker Road and Montague Expressway – CMP/San José	AM	**66.6**	**E**	**81.5**	**F**	**95.0**	**F**	**38.9**	**0.155**	17	**89.6**	**F**	**31.7**	**0.139**	12
		PM	**70.7**	**E**	**97.4**	**F**	**120.1**	**F**	**86.6**	**0.262**	19	**111.4**	**F**	**73.1**	**0.237**	13
10	Zanker Road and Plumeria Drive – San José	AM	25.2	C	27.5	C	27.1	C	3.2	0.143	---	27.2	C	3.3	0.131	---
		PM	26.1	C	28.6	C	28.6	C	4.6	0.154		28.6	C	4.5	0.142	
11	Trimble Road and US 101 – San José	AM	28.1	C	40.1	D	42.5	D	16.8	0.067	---	41.6	D	15.3	0.062	---
		PM	15.5	B	24.3	C	26.6	C	15.0	0.103		25.7	C	13.7	0.097	
12	De La Cruz Boulevard and Trimble Road – CMP/San José	AM	31.7	C	41.0	D	40.8	D	21.2	0.149	---	40.9	D	21.2	0.149	---
		PM	**84.0**	**F**	**105.9**	**F**	**108.7**	**F**	**38.9**	**0.096**	6	**107.7**	**F**	**37.4**	**0.093**	4
13	Orchard Parkway and Trimble Road – San José	AM	34.7	C	35.8	D	35.7	D	1.4	0.016	---	35.7	D	1.4	0.016	---
		PM	47.3	D	52.8	D	53.0	D	0.9	0.053		52.9	D	0.9	0.053	
14	North First Street and Trimble Road – CMP/San José	AM	52.4	D	**65.6**	**E**	**67.2**	**E**	**24.3**	**0.139**	9	**66.7**	**E**	**23.5**	**0.136**	6
		PM	45.3	D	54.0	D	**55.1**	**E**	**13.0**	**0.148**	8	54.7	D	12.5	0.144	5
15	Zanker Road and Trimble Road – CMP/San José	AM	41.6	D	44.8	D	47.2	D	7.6	0.148	---	46.2	D	6.1	0.130	---
		PM	44.2	D	**55.3**	**E**	**57.4**	**E**	**20.9**	**0.163**	12	**56.6**	**E**	**19.6**	**0.157**	8
16	Orchard Parkway and Guadalupe Parkway – San José	AM	34.7	C	40.9	D	41.6	D	10.1	0.108	---	41.3	D	9.6	0.105	---
		PM	39.1	D	43.6	D	44.4	D	8.3	0.091		44.1	D	7.8	0.088	

[79] The % represents the total percentage of the projects contribution to the cumulative delay.

Table 4.0-1: Cumulative Conditions Intersection Level of Service

No.	Intersection	Peak Hour	Background		Cumulative No Project		Cumulative Plus Project – Light Industrial Development Option					Cumulative Plus Project – Data Center/Light Industrial Development Option				
			Delay	LOS	Delay	LOS	Delay	LOS	Critical Delay	V/C	% [79]	Delay	LOS	Critical Delay	V/C	%
17	North First Street and Charcot Avenue – San José	AM	**55.6**	**E**	**86.7**	**F**	**89.1**	**F**	**52.9**	**0.162**	7	**88.2**	**F**	**51.4**	**0.158**	4
		PM	41.3	D	47.1	D	47.6	D	8.3	0.137	---	47.4	D	8.1	0.134	---
18	Zanker Road and Charcot Avenue – San José	AM	43.7	D	**61.8**	**E**	**65.9**	**E**	**34.7**	**0.198**	8	**64.2**	**E**	**32.1**	**0.190**	6
		PM	**64.0**	**E**	**103.0**	**F**	**105.6**	**F**	**69.2**	**0.188**	7	**104.6**	**F**	**67.6**	**0.184**	5
19	Zanker Road and Brokaw Road – CMP/San José	AM	48.0	D	**70.8**	**E**	**73.6**	**E**	**56.3**	**0.205**	5	**72.7**	**E**	**54.2**	**0.199**	3
		PM	47.3	D	**59.6**	**E**	**60.4**	**E**	**22.3**	**0.161**	4	**60.1**	**E**	**21.8**	**0.160**	3
20	Old Oakland Road and Montague Expressway – CMP/San José	AM	**100.4**	**F**	**110.6**	**F**	**112.8**	**F**	**19.0**	**0.384**	**8**	**111.9**	**F**	**17.7**	**0.379**	5
		PM	**102.2**	**F**	**116.1**	**F**	**118.3**	**F**	**25.2**	**0.070**	**7**	**117.5**	**F**	**24.1**	**0.068**	5
21	Trade Zone Boulevard and Montague Expressway – CMP/San José	AM	**63.8**	**E**	**66.1**	**E**	**67.0**	**E**	**5.4**	**0.049**	**8**	**66.6**	**E**	**4.8**	**0.047**	5
		PM	**64.1**	**E**	**72.6**	**E**	**73.5**	**E**	**22.0**	**0.063**	**8**	**73.2**	**E**	**21.5**	**0.061**	5
22	Lafayette Street and Calle De Luna – Santa Clara	AM	13.8	B	17.4	B	18.1	B	0.8	0.014	---	17.9	B	0.5	0.009	---
		PM	20.3	C	19.4	B	20.2	C	0.8	0.013		19.9	B	0.5	0.008	
23	Called Del Sol and Tasman Drive – Santa Clara	AM	16.4	B	15.9	B	17.0	B	1.1	0.022	---	16.5	B	0.7	0.012	---
		PM	19.0	B	19.0	B	19.2	B	0.2	0.004		19.2	B	0.1	0.002	
24	Lick Mill Boulevard and Tasman Drive – Santa Clara	AM	34.5	C	40.1	D	40.1	D	0.0	0.001	---	40.1	D	0.0	0.001	---
		PM	28.1	C	**64.4**	**E**	**64.5**	**E**	**0.4**	**0.002**		**64.5**	**E**	**0.3**	**0.001**	
25	Lafayette Street and Montague Expressway (North) – Santa Clara	AM	32.5	C	46.9	D	47.0	D	0.2	0.003	---	47.0	D	0.1	0.002	---
		PM	26.0	C	26.6	C	27.1	C	0.7	0.006		26.9	C	0.5	0.004	
26	Lafayette Street and Montague Expressway (South) – Santa Clara	AM	12.6	B	13.2	B	13.1	B	-0.1	0.003	---	13.1	B	0.0	0.002	---
		PM	12.5	B	10.9	B	10.9	B	0.0	0.006		10.9	B	0.0	0.004	
27	De La Cruz Boulevard and Montague Expressway – CMP/Santa Clara	AM	**91.7**	**F**	**174.8**	**F**	**177.9**	**F**	**1.2**	**0.002**	---	**176.8**	**F**	**0.9**	**0.001**	---
		PM	**92.7**	**F**	**154.0**	**F**	**158.9**	**F**	**2.7**	**0.009**		**157.1**	**F**	**1.7**	**0.006**	
28	Lick Mill Blvd and Montague Expressway – Santa Clara	AM	16.1	B	19.6	B	19.4	B	-0.4	0.017	---	19.5	B	-0.2	0.011	---
		PM	15.3	B	25.2	C	25.5	C	0.1	0.018		25.4	C	0.1	0.011	
29	De La Cruz Boulevard and Central Expressway – CMP/Santa Clara	AM	75.1	E	**91.6**	**F**	**91.1**	**F**	**-0.1**	**0.001**	---	**91.2**	**F**	**-0.1**	**0.001**	---
		PM	**114.0**	**F**	**136.8**	**F**	**138.6**	**F**	**0.0**	**0.000**		**137.9**	**F**	**0.0**	**0.000**	
30	I-880 SB and Calaveras Boulevard – Milpitas	AM	17.4	B	17.4	B	17.3	B	0.1	0.060	---	17.3	B	0.0	0.038	---
		PM	14.8	B	14.8	B	14.8	B	0.1	0.013		14.8	B	0.0	0.008	
31	I-880 NB and Calaveras Boulevard – Milpitas	AM	14.4	B	14.4	B	18.8	B	5.0	0.092	---	17.0	B	3.0	0.057	---
		PM	25.7	C	25.9	C	26.6	C	1.0	0.017		26.3	C	0.6	0.011	
32	Abbott Avenue and Calaveras Boulevard – Milpitas	AM	26.2	C	26.2	C	26.4	C	0.3	0.013	---	26.3	C	0.2	0.008	---
		PM	26.1	C	26.1	C	26.1	C	0.0	0.002		26.1	C	0.0	0.001	
33	Serra Way and Calaveras Boulevard – Milpitas	AM	16.3	B	16.3	B	16.4	B	0.2	0.013	---	16.4	B	0.1	0.008	---
		PM	21.9	C	21.9	C	22.0	C	0.2	0.014		22.0	C	0.1	0.009	
34	Abel Street and Calaveras Boulevard – CMP/Milpitas	AM	59.6	E	62.7	E	67.0	E	7.0	0.023	---	65.3	E	4.3	0.014	---
		PM	52.1	D	55.3	E	56.9	E	2.5	0.012		56.3	E	1.6	0.008	

Table 4.0-1: Cumulative Conditions Intersection Level of Service																
No.	**Intersection**	**Peak Hour**	**Background**		**Cumulative No Project**		**Cumulative Plus Project – Light Industrial Development Option**					**Cumulative Plus Project – Data Center/Light Industrial Development Option**				
			Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Critical Delay**	**V/C**	**%**[79]	**Delay**	**LOS**	**Critical Delay**	**V/C**	**%**
35	Milpitas Boulevard and Calaveras Boulevard – CMP/Milpitas	AM	62.1	E	69.7	E	74.2	E	6.9	0.018	---	72.4	E	4.2	0.011	---
		PM	43.4	D	44.6	D	44.8	D	0.4	0.006		44.8	D	0.3	0.004	
36	McCarthy Boulevard and Tasman Drive – Milpitas	AM	37.6	D	49.7	D	50.8	D	1.7	0.014	---	50.4	D	1.0	0.009	---
		PM	40.7	D	48.1	D	48.5	D	0.2	0.001		48.3	D	0.1	0.001	
37	I-880 and Tasman Drive – Milpitas	AM	26.1	C	27.0	C	27.4	C	0.7	0.008	---	27.2	C	0.4	0.005	---
		PM	22.9	C	26.9	C	26.9	C	0.0	0.000		26.9	C	0.0	0.000	
38	I-880 and Great Mall Parkway – Milpitas	AM	49.3	D	53.3	D	54.3	D	1.3	0.008	---	53.9	D	0.8	0.005	---
		PM	31.0	C	32.6	C	32.7	C	0.0	0.008		32.7	C	0.0	0.005	
39	Abel Street and Great Mall Parkway – Milpitas	AM	31.0	C	31.0	C	31.9	C	1.4	0.017	---	31.5	C	0.8	0.010	---
		PM	28.4	C	28.8	C	29.0	C	0.3	0.006		29.0	C	0.2	0.004	
40	Alder Drive and Tasman Drive - Milpitas	AM	25.2	C	26.5	C	27.1	C	0.8	0.008	---	26.9	C	0.5	0.005	---
		PM	**170.8**	**F**	**178.7**	**F**	**181.6**	**F**	**3.6**	**0.008**		**180.5**	**F**	**2.3**	**0.005**	

Of the impacted intersections, the project would contribute more than 25 percent of the increased delay at the following City of San José intersections under the light industrial development option (Option 1):

Zanker Road and SR 237 (North) – PM Peak Hour: The intersection would degrade from LOS B to LOS E in the PM Peak Hour under cumulative plus project conditions with a 59.4 second increase in critical delay and a 0.854 increase in V/C. The project would contribute 72 percent of the increase in traffic volume in the PM Peak Hour under cumulative conditions.

Zanker Road and Tasman Drive – AM Peak Hour: The intersection would degrade from LOS D to LOS E in the AM Peak Hour under cumulative plus project conditions with a 41.5 second increase in critical delay and a 0.173 increase in V/C. The project would contribute for 41 percent of the increase in traffic volume under cumulative conditions.

The data center/light industrial development option (Option 2) would contribute more than 25 percent of the increased delay at the following San José intersection:

Zanker Road and Tasman Drive – AM Peak Hour: The intersection would degrade from LOS D to LOS E in the AM Peak Hour under cumulative plus project conditions with a 28.5 second increase in critical delay and a 0.133 increase in V/C. The project would contribute for 31 percent of the increase in traffic volume under cumulative conditions. The development of the data center component of Option 2 alone would not result in a cumulative impact at this intersection.

The project would not have a cumulatively considerable impact on any City of Santa Clara or City of Milpitas intersections.

Implementation the proposed project either project option would result in a cumulatively consideration contribution to the Zanker Road/Tasman Drive intersection impacts. This intersection was identified as an impacted intersection in the *North San José Development Policy FEIR*.

The Zanker Road/Tasman Drive intersection was identified as an impacted intersection in the North San José Development Policy FEIR. The widening of Zanker Road was identified as the necessary improvement to be funded by the North San José Development Policy Traffic Impact Fee. All identified improvements on Zanker Road have, however, already been implemented. As such, there are no additional improvements.

Impact TRAN(C)-1: The proposed project would have a cumulatively considerable contribution to two intersections. The data center alone would not result in these impacts. **(Significant Impact)**

4.1.1.3 *Mitigation Measures for Cumulative Transportation Impacts*

The following mitigation measure identifies roadway improvements that could reduce the identified intersection impact. The feasibility of the mitigation measures are addressed below.

MM TRAN(C)-1.1: The LOS at the Zanker Road/SR 237(N) intersection would be improved over background conditions with the addition of a second southbound through lane. This improvement would reduce the average delay to LOS B in the PM Peak Hour.

With implementation of the identified mitigation measure, the cumulative traffic impact to the Zanker Road/SR 237(N) intersection would be reduced to less than significant. Impacts at the Zanker Road/Tasman Drive intersection remain significant unavoidable as identified in the NSJADP EIR. **(Less Than Significant with Mitigation)**

4.1.2 Cumulative Air Quality Impacts

The project would result in a temporary TAC emissions impact resulting from construction of the proposed development. The impact would be temporary and would not impact sensitive receptors. Furthermore, operation of the proposed project would not result in significant impacts from criteria pollutant emissions or TACs. As a result, the projects contribution to a cumulatively significant air quality impact would not be considerable. **(Less Than Significant Cumulative Impact)**

4.1.3 Cumulative Noise Impacts

4.1.3.1 *Traffic Noise*

As discussed in Section 3.11 Noise*,* traffic trips associated with the proposed project would not increase ambient noise levels in the project area or near sensitive receptors. The proposed project, combined with other pending and approved projects in the immediate area would not increase ambient noise levels over existing conditions. **(Less Than Significant Cumulative Impact)**

4.1.3.2 *Construction Noise*

At the time the EIR Notice of Preparation was released, the only pending project was improvements to the RWF located north of the site. While construction of the RWF project could overlap with construction of the proposed project, there are no sensitive receptors in the area that would be affected. Permit conditions would be implemented to reduce construction noise. As a result, construction of the proposed project is not anticipated to result in a significant cumulative construction noise impact. **(Less Than Significant Cumulative Impact)**

4.1.4 Cumulative Biological Resources Impacts

4.1.4.1 *Construction Related Impacts*

The analysis identified impacts to migratory birds and removal of trees as a result of project construction. These impacts are, however, temporary and would be reduced to a less than significant level with implementation of the proposed mitigation measures. Because of the temporary nature of these impacts and the fact that the impacts will be mitigated, there would be no long term cumulative effect. **(Less Than Significant Cumulative Impact)**

4.1.4.2 *Burrowing Owls*

Implementation of the proposed project could result in the loss of individual owls and land identified under the SCVHP as owl habitat. Impacts to both individual owls and the habitat would be mitigated through the SCVHP, including removal of owls from the site prior to construction and fees for replacement habitat. Because the project is required to comply with the SCVHP, which addresses countywide impacts to special status habitats and wildlife, the projects impact on Burrowing Owls and owl habitat would not be cumulatively considerable. **(Less Than Significant Cumulative Impact)**

4.1.4.3 *Sensitive Habitats*

Installation of the potential outfall into Coyote Creek would impact existing riparian vegetation within the creek channel. Mitigation measures have been identified to minimize the impacted area and replace lost vegetation. While the replacement vegetation would not immediately provide the same habitat value as existing vegetation, it will fully replace what is lost over time. As no other projects are proposed in the immediate area that would impact riparian vegetation on this segment of Coyote Creek, the impact to the riparian habitat would not be cumulatively considerable. **(Less Than Significant Cumulative Impact)**

4.1.4.4 *Loss of Important Farmlands*

The City of San José's General Plan FPEIR identifies the loss of important farmlands as a significant unavoidable impact due to development in the City. The proposed project would result in the loss of approximately 64.5 acres of these lands. However, the project is consistent with the General Plan land use designation for the site and its development was included in the analysis and conclusions of the General Plan analysis. The cumulative impact identified in the General Plan FPEIR remains significant and unavoidable. **(Significant Unavoidable Cumulative Impact)**

4.1.5 Other Cumulative Impacts

Based on the analysis in this EIR, the proposed project would have no impact on forestry resources and mineral resources, and a less than significant impact on aesthetics, cultural resources, energy, geology and soils, hydrology and water quality, and land use (including population and housing). The degree to which the proposed project would add to existing or probable future impacts on existing land uses or the aforementioned resources would be negligible.

4.1.5.1 *Hazardous Materials*

Hazardous materials contamination is typically a localized issue. The proposed project has identified specific mitigation measures to address residual soil contamination on-site, as well as asbestos and lead-based paint from older structures on-site. The proposed development would not pose a risk from the use or storage of hazardous materials. Future redevelopment within the project area and intensification of growth throughout the City of San José could expose existing soil and/or groundwater contamination which would need to be remediated.

The most likely impact to nearby sensitive receptors and construction workers would be exposure during removal and off-haul of contaminates. As there are no pending projects within the immediate project area, it is improbable that the remediation of multiple project sites within a limited geographical area would occur at the same time. Truck routes would be established by the City to avoid residential and other sensitive areas and remediation activities would be required to comply with all applicable regulations. Therefore, redevelopment within the project area would not result in a cumulatively significant hazardous materials impact. **(Less Than Significant Cumulative Impact)**

4.1.5.2 *Utilities and Public Services*

The project's use of energy, water, the sanitary sewer system, and landfills, as well as police and fire protection services and local community services (schools, parks, libraries, etc.) was accounted for in General Plan as part of the planned growth of the City. When applicable, the General Plan identified the need for increased services and infrastructure to support the planned growth of the City. The project, by itself, will have a less than significant impact on these resources and services. The proposed project, combined with future redevelopment within north San José and intensification of growth throughout the City of San José, would significantly increase the use/need for these resources and services, but would not result in a significant cumulative impact. As a result, the project's contribution to the increased use of in any of these resource areas would not be considerable. **(Less Than Significant Cumulative Impact)**

4.1.5.3 *Greenhouse Gas Emissions*

The proposed development is consistent with the General Plan and would have a less than significant GHG emissions impact for development through 2020. Beyond 2020, implementation of the project would not result in any new or greater GHG emission impacts than were previously identified in the Envision San José 2040 FSPEIR. Due to the nature of GHG emissions, a significant project level impact is equivalent to a significant cumulative impact. **(Significant Unavoidable Impact)**

4.1.6 Conclusion

Implementation of the proposed project would result in a cumulatively considerable impact to the Zanker Road/SR 237(N) intersection. Mitigation has been identified to reduce this impact to a less than significant level. **(Less Than Significant Cumulative Impact with Mitigation)**

Implementation of the proposed project would result in a cumulatively considerable impact to the Zanker Road/Tasman Drive intersection. No mitigation has been identified to reduce this impact to a less than significant level. **(Significant Unavoidable Cumulative Impact)**

Implementation of the proposed project would contribute towards the cumulative loss of Important Farmlands in the City of San José. This impact was identified in the San José General Plan FPEIR. **(Significant Unavoidable Cumulative Impact)**

The proposed project would not have a cumulatively considerable impact on aesthetics, air quality, biological resources, cultural resources, energy, geology and soils (including mineral resources), greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use (including forestry, and population and housing), noise, public services (including recreation), or utilities. **(Less Than Significant Cumulative Impact)**

SECTION 5.0 GROWTH-INDUCING IMPACTS

For the purposes of this project, a growth inducing impact is considered significant if the project would:

- Cumulatively exceed official regional or local population projections;
- Directly induce substantial growth or concentration of population. The determination of significance shall consider the following factors: the degree to which the project would cause growth (i.e., new housing or employment generators) or accelerate development in an undeveloped area that exceeds planned levels in local land use plans; or
- Indirectly induce substantial growth or concentration of population (i.e., introduction of an unplanned infrastructure project or expansion of a critical public facility [road or sewer line] necessitated by new development, either of which could result in the potential for new development not accounted for in local general plans).

The project proposes development on currently fallow farm land in the northern portion of the City of San José. The site is surrounded by vacant lands and some existing industrial development. The vacant lands, including those held by the City, and the project site have, however, been slated for development for many years. The development and extension of utilities to these properties was described in the Envision San José 2040 General Plan, the Alviso Master Plan, and the RWF Plant Master Plan. The impacts of such development were identified in the respective EIRs for these projects. Development of under the proposed rezoning would require expansion of utilities to the site, which would help facilitate development of the adjacent vacant parcels. Expansion of utilities to serve the site would not, however, facilitate growth beyond the immediate project area.

Development under the proposed rezoning would place new light industrial, and possibly a data center, in the middle of a low density development area. The proposed project would be compatible with the surrounding land uses and would not pressure adjacent properties to redevelop with new or different land uses, in a manner inconsistent with the existing General Plan.

Development under the proposed project would result in a net increase in jobs Citywide. There is currently an abundance of housing within the City of San José compared to the number of jobs within the City. The increase in jobs will incrementally decrease the overall jobs/housing imbalance within the City.

While the project would develop currently vacant land, it is part of planned growth of San José and, as a result, the project would not have a significant growth inducing impact.

SECTION 6.0 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA and the CEQA Guidelines require that an EIR address "significant irreversible environmental changes which would be involved in the proposed project, should it be implemented." [§15126(c)]

If the proposed project is implemented, future development on the site would involve the use of non-renewable resources both during construction phases and future operations/use of the site. Construction would include the use of building materials, including materials such as petroleum-based products and metals that cannot reasonably be re-created. Construction also involves significant consumption of energy, usually petroleum-based fuels that deplete supplies of non-renewable resources. Upon completion of new construction on-site, occupants will use non-renewable fuels to heat and light the buildings. The proposed project will also result in the increased consumption of water. Water consumption on the project site is currently low because the farmland is currently fallow and there is no active irrigation of the site.

The City of San José encourages the use of building materials that include recycled materials and makes information available on those building materials to developers. New buildings will be built to current codes, which require insulation and design to minimize wasteful energy consumption. The proposed development would be constructed consistent with the City's Green Building Policy and would, as a result, use less energy for heat and light and less water than standard design buildings. The site provides an expansion of job opportunities that are more reasonably proximate to existing housing and transportation networks in Santa Clara, San José, and Cupertino than housing farther away in the south county and other counties to the north. The proposed project will, therefore, facilitate a more efficient use of resources over the life time of the project.

SECTION 7.0 SIGNIFICANT AND UNAVOIDABLE IMPACTS

A significant unavoidable impact is an impact that cannot be mitigated to a less than significant level if the project is implemented as it is proposed. The following significant unavoidable impacts have been identified as resulting from the proposed project:

4. Implementation of the proposed project would result in the development of 64.5 acres of land designated as Prime Farmland. Same significant unavoidable impact identified in the Envision San José Final Supplemental PEIR.

5. Implementation of the data center/light industrial development option would result in the development of new land uses after the year 2020, resulting in unmitigated GHG emissions impacts. Same significant unavoidable impact identified in the Envision San José Final Supplemental PEIR.

6. Implementation of the light industrial uses would have a significant impact on the mixed flow lanes of seven directional freeway segments and HOV lanes of three directional freeway segments.

7. Implementation of the project would have a cumulatively considerable contribution to the Zanker Road/Tasman Drive intersection. Same significant unavoidable impact identified in the North San José Development Policy FEIR.

All other significant impacts of the proposed project would be reduced to a less than significant level with the implementation of mitigation measures identified in this EIR

SECTION 8.0 ALTERNATIVES

8.1 OVERVIEW

The California Environmental Quality Act (CEQA) requires that an EIR identify and evaluate alternatives to a project as it is proposed. Two key provisions from the CEQA Guidelines pertaining to the discussion of alternatives are included below:

> **Section 15126.6(a). Consideration and Discussion of Alternatives to the Proposed Project.** An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.
>
> **Section 15126.6(b). Purpose.** Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or be more costly.

Other elements of the Guidelines discuss that alternatives should include enough information to allow a meaningful evaluation and comparison with the proposed project. The CEQA Guidelines state that if an alternative would cause one or more additional impacts, compared to the proposed project, the discussion should identify the additional impact, but in less detail than the significant effects of the proposed project.

The three critical factors to consider in selecting and evaluating alternatives are: (1) the significant impacts from the proposed project that could be reduced or avoided by an alternative, (2) consistency with the project's objectives, and (3) the feasibility of the alternatives available. Each of these factors is discussed below.

8.1.1 Significant Impacts from the Project

The project would result in the following significant unavoidable impacts:

> **Transportation:** Contribution to traffic congestion on SR 237 and I-880. (Impact TRAN-3)
>
> **Loss of Prime Farmland:** The conversion of Prime Farmland to a non-agricultural use. Same significant unavoidable impact identified in the Envision San José Final Supplemental PEIR. Impact (AGR-1)

Greenhouse Gases: Contribution to the previously identified greenhouse gas emissions impacts identified in the Envision San José Final Supplemental PEIR. (Impact GHG-1)

Alternatives may also be considered if they would further reduce impacts that are already less than significant because the project is proposing mitigation. The project would result in potentially significant impacts in the following areas, but includes mitigation measures that would reduce the impacts to less than significant levels:

Transportation: Traffic congestion at intersections of North First Street/Montague Expressway and Zanker Road/Montague Expressway. (Impacts TRAN-1 and TRAN-2)

Air Quality: Increase in NOx levels from emergency generator testing/maintenance. (Impact AQ-1)

Biological Resources: Potential damage during construction to trees planned for preservation, potential impacts to tree-nesting raptors and western burrowing owls, and impacts to riparian habitat. (Impacts BIO-1, BIO-2, BIO-3, and BIO-4)

Hazards and Hazardous Materials: Potential exposure of construction workers and nearby sensitive receptors to soil and dust contaminated with residual agricultural pesticides, lead, and arsenic. (Impact HAZ-1)

8.1.2 Objectives of the Project

While CEQA does not require that alternatives be capable of meeting all of the project objectives, their ability to meet most of the objectives is considered relevant to their consideration. The stated objectives of the project proponent are to:

1. Support the community values outlined in the Envision San José 2040 General Plan, including, among others, the Innovative Economy goals by providing key infrastructure improvements driving today's businesses, and Quality Education and Services by significantly increasing property tax revenue to local agencies.

2. Support the implementation of the Alviso Master Plan vision for the project site as well as the "Focused Growth" Major Strategy from the Envision San José 2040 Plan, including a focus on economic growth, fiscal sustainability, and environmental sustainability.

3. Allow for the construction and operations of a data center of approximately 440,000 square feet that will house computer servers, supporting equipment, and associated office uses in an environmentally controlled structure with redundant subsystems systems (cooling, power, network links, storage, fire suppression, etc.). The data center shall be located near a reliable large power source and emergency response access, and be located such that it can be protected, to the maximum extent feasible, from security threats, natural disasters, and similar events.

4. Provide operational electric power to the proposed data center via an electric substation, and provide other utility infrastructure to serve the project (as well as other planned growth in the vicinity consistent with the City's infrastructure planning and partnership objectives), including water, storm drainage, sanitary sewer, electric, natural gas, and telecommunications, as well as new roadway infrastructure.

5. Support San José's stated job creation objectives by allowing for the construction of up to 1.2 million square feet of new light industrial uses that are compatible with nearby land uses, which would then further stimulate economic activity and employment generation.

6. Develop a light industrial campus that is well-designed per industry standards and properly integrates the planned uses and related improvements including, among others, parking, loading docks, vehicle access, and bicycle and pedestrian connections.

7. Develop a light industrial campus that is well-designed per industry standards and properly integrates light industrial uses, data center uses, parking, loading docks, vehicle access, and bicycle and pedestrian connections.

8. Incorporate, as feasible, environmentally sustainable features into the project, such as appropriate bird-friendly building design components, and the creation of an environmental buffer zone along Coyote Creek consistent with the City's Riparian Corridor Policy setback of 100 feet.

9. Meet the growing demand for light industrial uses, which may include a data center to support the region's growing businesses and work force population in support of Envision San José 2040 General Plan's Major Strategy #4, which calls for development supporting San José's growth as a center of innovation.

10. Construct new on- and off-site infrastructure improvements, including water, storm water, sanitary sewer, electric, natural gas, and telecom facilities to allow the proposed development as well as the implementation of the San José-Santa Clara Regional Wastewater Facility Master Plan which created economic development areas west of the project site. (Separate environmental review was completed for the Master Plan by the City of San José in late 2013.)

8.1.3 <u>Feasibility of Alternatives</u>

CEQA, the CEQA Guidelines, and case law on the subject have found that feasibility can be based on a wide range of factors and influences. CEQA's general definition of feasibility is "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." Among the factors that may be taken into account in considering the feasibility of an alternative are "…site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries,…and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site…" [Section 15126.6(f)(1)].

8.1.4 Selection of Alternatives

Consideration of a "No Project" alternative is mandatory. The purpose of including a No Project alternative is to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project.

In addition to the "No Project" alternative, the Guidelines advise that the range of alternatives discussed in the EIR "shall be limited to those that would avoid or substantially lessen any of the significant effects of the project [Section 15126.6(f)].

8.1.5 Alternatives Considered but Not Selected for Analysis

8.1.5.1 *Location Alternative*

CEQA encourages consideration of an alternative site when impacts of the project might be avoided or substantially lessened. Only locations that would avoid or substantially lessen any of the impacts of the project and meet most of the project objectives need to be considered for inclusion in the EIR. The proposed project is light industrial development on a vacant site. Heavy industrial uses are located to the west of the site, as shown on Figure 2.0-3.

An alternative location is not discussed in this analysis because the project applicant does not own other properties that could be used as alternative sites. In addition, impacts to traffic congestion on SR 237 and I-880, which is one of the project's significant and unavoidable impacts, would likely occur at any alternative location in the vicinity of the site. Similarly, greenhouse gas impacts would occur as a result of the project wherever it is proposed in the City. The project site is designated as Prime Farmland, as are other properties in the northernmost portions of San José that are large enough to accommodate the project. The project site is located in an area of other heavy industrial uses and is of sufficient size to accommodate the proposed project. It is also located away from sensitive receptors and is flat topographically.

Therefore, an alternative location would be unlikely to reduce the three significant and unavoidable impacts of the project to a less than significant level. The site is located away from sensitive receptors which could be affected by loading dock and traffic noise generated on the site. Topographically flat properties in excess of 64 acres are not common in San José. Therefore, a location alternative is infeasible and was not evaluated further.

8.2 PROJECT ALTERNATIVES

The alternatives discussed in the following sub-sections include a No Project - No Development Alternative, a No Project - Existing Zoning Alternative, a Reduced Scale - Data Center Only Alternative, a Reduced Scale - Light Industrial Only Development Alternative, and a Reduced Scale - Data Center/Light Industrial Development Alternative.

8.2.1 No Project - No Development Alternative

The CEQA Guidelines stipulate that an EIR specifically include a "No Project" alternative. The purpose of including a No Project alternative is to allow decision-makers to compare the impacts of approving the project with the impacts of not approving the project. The Guidelines specifically advise that the No Project alternative is "what would be reasonably expected to occur in the foreseeable future if the project is not approved, based on current plans and consistent with available infrastructure and community services." [Section 15126.6(e)(2)] The Guidelines emphasize that an EIR should take a practical approach, and not "…create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment [Section 15126.6(e)(3)(B)]." Since the approximately 64.5-acre project site is currently vacant with minimal development, including two residences, a mobile home, and farm-related accessory structures, the No Project - No Development Alternative would be the continued use of the site in this manner. The project site is, however, currently designated *Light Industrial* in the City's General Plan.

8.2.1.1 *Comparison of Environmental Impacts*

The No Project - No Development Alternative would avoid the proposed project's environmental impacts. The No Project - No Development Alternative would avoid conversion of Prime Farmland to non-agricultural uses. In addition, traffic and GHG emissions would not be generated in excess of what is currently generated by the low-intensity uses on-site. Since no demolition or construction would take place on the project site, no new environmental impacts would occur.

8.2.1.2 *Feasibility of the No Project - No Development Alternative*

Implementation of the No Project - No Development Alternative would occur if the proposed project is not approved, which is feasible. However, the existing development on-site is inconsistent with the General Plan land use designation of the site. The project site is designated for development in the City's General Plan as well as the Alviso Master Plan. It is expected that the site will eventually be developed with light industrial uses at some point in the future.

8.2.1.3 *Relationship to Project Objectives*

The No Project - No Development Alternative would not meet any of the project objectives.

8.2.2 <u>No Project – Existing Zoning Alternative</u>

The No Project - Existing Plans Redevelopment Alternative assumes that the proposed project is not approved, but that another future project is built consistent with existing plans and policies. According to the Alviso Master Plan and the General Plan, the site has a land use designation of *LI – Light Industrial*, which allows for a maximum FAR of 1.5 (1-3 stories).

The project site was originally part of the USDataport project which included the LECEF, as well as up to approximately 2.3 million square feet of data center communication facility uses in warehouse-style buildings on the original 174-acre site. Building heights of up to 100 feet are allowed by the existing *A(PD)* zoning. The existing *A(PD)* zoning designation of the site could be implemented; however, it is expected rezoning would be required due to the fact that some of the previously approved development has been constructed, thus requiring a new site plan to take into account building locations, access, and site circulation. However, it can be reasonably expected that in the foreseeable future, based on the current General Plan and zoning designations on the site, a light industrial development would ultimately be constructed on-site.

This alternative assumes development on the project site similar to the currently proposed project, which is consistent with the General Plan designation for the site. The uses, however, would primarily be data center related. The proposed conforming zoning of *Light Industrial* is consistent with the General Plan; however, a Special Use Permit (SUP) is required for the currently proposed data center.

8.2.2.1 *Comparison of Environmental Impacts*

Transportation

Development on the site consistent with the existing *A(PD)* zoning, which are data center related, would increase traffic at local intersections and on freeways; however, because the uses would be mostly data center related, they would be less than the proposed project. The traffic report prepared for the USDataport project is no longer current, however, trip generation for the USDataport project was significantly less than that of the proposed project (both Option 1 and Option 2). Thus, this Alternative would generate less traffic and the significant unavoidable impacts at freeway segments and impacts at the intersections on Montague Expressway would not occur.

Prime Farmland

The No Project - Existing Zoning Alternative would result in the same significant unavoidable impacts related to the loss of Prime Farmland as the currently proposed project and as described in the Envision San José 2040 General Plan FPEIR.

Greenhouse Gas Emissions

The existing zoning of the site allows the construction of light industrial uses, primarily data center related. It was estimated at the time of the preparation of the USDataport EIR that approximately 89 emergency back-up generators would be required. Therefore, the proposed project, which includes 24 emergency back-up generators would generate less greenhouse gas emissions when compared to the project allowed under the current *A(PD)* zoning. Greenhouse gas emissions impacts would be significant unavoidable with either the proposed project or the No Project – Existing Zoning Alternative.

Air Quality

As with the currently proposed project, the No Project - Existing Zoning Alternative would have significant NOx impacts. Mitigation measures would be implemented similar to those required of Option 2, and significant unavoidable impacts would not be anticipated.

Biological Resources

This Alternative would result in comparable impacts to trees, riparian habitat (if the outfall to Coyote Creek is constructed), burrowing owls, and tree-nesting birds and raptors. Mitigation measures requiring pre-construction surveys during nesting season as well as tree protection measures would be incorporated to reduce significant impacts. Participation in the Santa Clara Valley Habitat Conservation Plan, including the implementation of required conditions, would reduce impacts to a less than significant level.

Hazards and Hazardous Materials

The No Project - Existing Zoning Alternative would result in soil disturbance, thereby resulting in potential hazardous materials impacts related to agricultural pesticides. Mitigation would still be required similar to the proposed project.

8.2.2.2 *Feasibility of the No Project - Existing Zoning Alternative*

Implementation of this Alternative would be feasible in terms of consistency with the existing land use designations for the site, the goals of the City of San José for this region, and with the surrounding land uses. However, it is expected that rezoning would be required due to the fact that some of the previously proposed development was already constructed and new access points, building locations, and circulation plans may be required.

8.2.2.3 *Relationship to Project Objectives*

The No Project - Existing Zoning Alternative would meet most of the project objectives, including constructing a data center. However, rezoning to accommodate the currently configured site and additional infrastructure or different infrastructure components could be required.

8.2.3 Reduced Scale - Data Center Only Alternative

The Reduced Scale - Data Center Only Alternative would result in the development of a data center on the northern portion of the 64.5-acre site without any additional light industrial uses. Under Option 2, the project proposes a 436,880 square foot data center with a PG&E substation on approximately 26.5 acres of the site. Under the Reduced Scale Data Center Only Alternative, the size of the data center is not anticipated to be larger than what is proposed and some of the roadways and the extension of utilities to the site would still be required. It is assumed that the laydown area (approximately 10 acres) would be utilized for approximately 10 years and ultimately left in its current state.

8.2.3.1 *Comparison of Environmental Impacts*

Transportation

Development of the site with the Reduced Scale - Data Center Only Alternative would generate no more than 433 daily traffic trips, with 39 trips in the AM Peak Hour and 40 trips in the PM Peak Hour (refer to Table 3.13-7). Because this Alternative would generate no more than 40 peak hour trips, construction of the data center would not result in any significant freeway segments and/or intersection impacts.

Prime Farmland

Similar to the proposed project, development of a Reduced Scale - Data Center Only project would result in the conversion of Prime Farmland to a non-agricultural use. This Alternative would result in a significant and unavoidable impact as stated in the General Plan EIR. However, if the remainder of the site (ultimately 38 acres) is left in its current state, this portion of the site would remain as Important Farmland until another use is proposed.

Greenhouse Gas Emissions

Because the data center is proposed to be constructed and operational by 2020 and vehicle trips related to this Alternative are relatively small, the greenhouse gas emission impacts would be less than significant. In addition, this Alternative is consistent with the San José General Plan and with the City of San José GHG Reduction Strategy; therefore, a significant unavoidable impact would not occur.

Air Quality

As with the currently-proposed project, the Reduced Scale - Data Center Only Alternative would have significant NOx impacts to sensitive receptors related to the testing of emergency generators. Mitigation measures would be implemented similar to those required of Option 2, and significant impacts would not be anticipated.

Biological Resources

This Alternative would result in fewer impacts to biological resources, as less land would be affected. However, the construction of a 26.5-acre data center and use of approximately 10 acres as a laydown area for equipment staging for up to 10 years could disturb wildlife species and adversely affect trees to be preserved, the construction of the outfall may still be required. Mitigation measures requiring pre-construction surveys during nesting season as well as tree protection measures would be required to reduce significant impacts.

Hazards and Hazardous Materials

The Reduced Scale - Data Center Only Alternative would result in soil disturbance, thereby resulting in potential hazardous materials impacts related to agricultural pesticides, although the amount of land affected would be less. Mitigation would still be required similar to the proposed project.

8.2.3.2 *Feasibility of the Reduced Scale – Data Center Only Alternative*

Implementation of this Alternative would be feasible in terms of the goals of the City of San José and the vision of the Alviso Master Plan for this region.

8.2.2.3 *Relationship to Project Objectives*

This Alternative would meet most of the objectives, with the exception of those related to job creation and economic growth. The provision of additional light industrial uses on the remainder of the site (ultimately 38 acres) would enhance the economic potential of the site by increasing property taxes, economic activity, and employment generation. The development of the entire site is consistent with General Plan policies related to Innovative Economy as well as the Alviso Master Plan and RWF Plant Master Plan.

8.2.3 Reduced Scale - Light Industrial Only Alternative

In an effort to avoid or reduce significant impacts resulting from the proposed project, this alternative evaluates a Reduced Scale - Light Industrial Only Alternative. To reduce traffic impacts to a less than significant level at the intersections of North First Street/Montague Expressway and Zanker Road/Montague Expressway and impacts to freeways, Option 1 of the project (1.2 million square feet of light industrial uses) would need to be reduced by 90 percent.[80] This equates to approximately 120,000 square feet of light industrial uses on the 64.5 acre site. To reduce freeway impacts only, the project would need to be reduced by 85 percent or approximately 180,000 square feet. At one story in height, that would be approximately 2.75 and 4.1 acres of light industrial development, respectively.

8.2.3.1 *Comparison of Environmental Impacts*

Transportation

Under Option 1 (1.2 million square feet of light industrial development), the proposed project would result in an unacceptable LOS at the Zanker Road/Montague Expressway and Oakland Road/Montague Expressway intersections during at least one peak hour. Significant unavoidable impacts to freeway segments on SR 237 and I-880 would also occur.

Reducing the project to 120,000 square feet of light industrial development would avoid both intersection and freeway impacts. A light industrial project of no more than 180,000 square feet would avoid significant unavoidable impacts to the local freeway segments.

Prime Farmland

The Reduced Scale - Light Industrial Only Alternative would result in the conversion of up to 4.1 acres of Prime Farmland to a non-agricultural use, when compared to 64.5 acres that would be converted with the proposed project. While significantly less land would be converted, there would still be a loss of Prime Farmland, which would be a significant unavoidable impact. This impact was previously identified in the General Plan FPEIR.

Greenhouse Gas Emissions

Development under this Alternative (up to approximately 4.1 acres of light industrial development) would be consistent with the City’s General Plan and would not result in greater GHG emissions impacts than those evaluated for the site in the General Plan FPEIR. This Alternative would be constructed by 2020 and would conform to the City’s GHG Reduction Strategy; therefore GHG emissions impacts would be less than significant. This Alternative would avoid a significant unavoidable impact associated with the currently proposed project.

Air Quality

The primary emissions from this Alternative would be from traffic (employees and vendor delivery trips) associated with daily operations. If the light industrial development was reduced to the levels

[80] Personal communication, Robert Del Rio, Hexagon Transportation Consultants, May 15, 2017.

described above under transportation impacts, significant air quality impacts would not be anticipated.

Biological Resources

This Alternative would result in some impacts to trees to be preserved on-site and tree-nesting birds and raptors. Impacts to burrowing owls would be significantly reduced as less land area would be affected. The outfall to Coyote Creek may or may not be required with such a reduced footprint of development. Percolation on-site may be sufficient to accommodate stormwater on-site. Mitigation measures requiring pre-construction surveys during the nesting season as well as tree protection measures would be incorporated to reduce significant impacts. Conditions of the SCVHP would still be required; however, at a significantly reduced level. Impacts would remain less than significant with the implementation of identified mitigation measures.

Hazards and Hazardous Materials

The Reduced Scale - Light Industrial Only Alternative would result in less soil disturbance, thereby resulting in a reduced potential for hazardous materials impacts related to agricultural pesticides. Mitigation would still be required similar to the proposed project.

8.2.3.2 *Feasibility of the Reduced Development-Light Industrial Alternative*

Because this Alternative would need to be reduced by approximately 85 – 90 percent to avoid both traffic and freeway impacts, it would be physically feasible, but economically infeasible to implement this Alternative. The extension of utilities to the site would still be required, which would be cost prohibitive given the size of the Alternative.

8.2.3.3 *Relationship to Project Objectives*

This Alternative would not meet most of the objectives of the proposed project. A data center would not be constructed and the amount of light industrial space provided would not achieve the economic strategies of the General Plan. The Reduced Development - Light Industrial Only Alternative would only provide up to approximately 180,000 square feet of light industrial space and would not be able to accommodate as many new jobs, compared to full project implementation. The project area would remain underutilized and would not meet project objectives to the extent of the entire proposed development.

8.2.4 Reduced Development – Data Center and Reduced Light Industrial Development Alternative

In an effort to avoid or reduce significant impacts resulting from the proposed project, a reduced scale alternative that includes the proposed 436,880 square foot data center and less light industrial development was evaluated. As with the Reduced Scale – Light Industrial Development Only Alternative, the amount of light industrial development would have to be significantly reduced to avoid traffic impacts to freeways and at the intersections of North First Street/Montague Expressway and Zanker Road/Montague Expressway. It has been determined that the light industrial portion of Option 2 of the project (data center and light industrial uses) would need to be reduced by 85 percent to avoid intersection and freeway impacts and 80 percent to avoid only the freeway impacts.[81] This equates to approximately 109,200 square feet (85 percent reduction) or 145,600 square feet (80 percent reduction) of light industrial uses square on approximately 38 acres of the 64.5 acre site. At one story in height, that would be approximately 2.5 and 3.34 acres of light industrial development, respectively.

8.2.4.1 *Comparison of Environmental Impacts*

Transportation

Under Option 2 of the proposed project, (a 436,880 square foot data center and 728,000 square feet of light industrial development), the proposed project would result in an unacceptable LOS at the Zanker Road/Montague Expressway and Oakland Road/Montague Expressway intersections during at least one peak hour. Significant unavoidable impacts to freeway segments on SR 237 and I-880 would also occur.

Reducing the project to a 436,880 square foot data center and 109,200 square feet of light industrial development would avoid both intersection and freeway impacts. A light industrial project of no more than 145,600 square feet would avoid significant unavoidable impacts to the local freeway segments.

Prime Farmland

The Reduced Scale – Data Center and Light Industrial Alternative would result in the conversion of up to 29.84 (26.5 acres for the data center and 3.34 acres for the light industrial uses) of Prime Farmland to a non-agricultural use, when compared to 64.5 acres that would be converted with the proposed project. While significantly less land would be converted, there would still be a loss of Prime Farmland, which would be a significant unavoidable impact. This impact was previously identified in the General Plan FPEIR.

Greenhouse Gas Emissions

Development under this Alternative (up to approximately 29.84 acres of data center and light industrial development) would be consistent with the City's General Plan and would not result in greater GHG emissions impacts than those evaluated for the site in the General Plan FPEIR. As with Option 2 of the proposed project, it is anticipated that the data center portion of the project would be constructed by 2020 and would conform to the City's GHG Reduction Strategy; however, the light industrial portion may not be. Therefore, GHG emissions impacts would continue to be significant unavoidable and this Alternative would not avoid a significant unavoidable impact associated with the currently proposed project.

Air Quality

The primary emissions from this Alternative would be from traffic (employees and vendor delivery trips) associated with daily operations. If the light industrial development was reduced to the levels described above under transportation impacts, significant air quality impacts would not be

[81] Personal communication, Robert Del Rio, Hexagon Transportation Consultants, May 24, 2017.

anticipated.

Biological Resources

This Alternative would result in some impacts to trees to be preserved on-site and tree-nesting birds and raptors. Impacts to burrowing owls would be reduced as less land area would be affected. The outfall to Coyote Creek may or may not be required with such a reduced footprint of development. Percolation on-site may be sufficient to accommodate stormwater on-site. Mitigation measures requiring pre-construction surveys during the nesting season as well as tree protection measures would be incorporated to reduce significant impacts. Conditions of the SCVHP would still be required; however, at a reduced level. Impacts would remain less than significant with the implementation of identified mitigation measures.

Hazards and Hazardous Materials

The Reduced Scale - Light Industrial Alternative would result in less soil disturbance, thereby resulting in a reduced potential for hazardous materials impacts related to agricultural pesticides. Mitigation would still be required similar to the proposed project.

8.2.3.2 *Feasibility of the Reduced Development - Data Center and Light Industrial Alternative*

This Alternative would reduce the light industrial portion of the project by approximately 80 - 85 percent to avoid both traffic and freeway impacts; however, the data center, at its proposed size would be constructed. Therefore, this Alternative would be feasible in terms of the goals of the City of San José and the vision of the Alviso Master Plan for this region.

8.2.2.3 *Relationship to Project Objectives*

This Alternative would meet most of the objectives, with the exception of those related to job creation and economic growth. Reducing the amount of light industrial development would reduce the economic potential of the site including property tax revenues, economic activity, and employment generation. The Reduced Development-Light Industrial Alternative would only provide up to approximately 145,600 square feet of light industrial space and would not be able to accommodate as many new jobs, compared to full project implementation. The project area would remain underutilized and would not meet project objectives to the extent of the entire proposed development.

SECTION 9.0 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines state that an EIR shall identify an environmentally superior alternative. Table 9.0-1 outlines a summary of the project alternatives. Based on the table below, the environmentally superior alternative to the proposed project is the No Project Alternative because all of the component's significant environmental impacts would be avoided. However, Section 15126.6(e)(2) states that "if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Table 9.0-1: Project Alternatives Summary Table

Impact	Proposed Project	No Project - No Development	No Project –Existing Zoning	Reduced Scale - Data Center Only	Reduced Scale - Light Industrial	Reduced Scale-Data Center & Reduced Light Industrial
TRAN-1: Zanker Road/Montague Expressway and Oakland Road/Montague Expressway intersections under existing plus project conditions	SU	NI	LTS	LTS	LTS	LTS
TRAN-2: North First Street/Montague Expressway and Zanker Road/Montague Expressway intersections under background plus project conditions	LTSM	NI	LTS	LTS	LTS	LTS
TRAN-3: Impacts to Freeway Segments of SR 237 and I-880	SU	NI	SU	LTS	LTS	LTS
AGR-1: Loss of land designated as Prime Farmland	SU	NI	SU	SU	SU	SU
GHG-1: Same significant unavoidable impact identified in the Envision San José 2040 Supplemental FPEIR	SU	NI	SU	LTS	LTS	SU
AQ-1: Significant impact related to the production of NOx during generator testing	LTSM	NI	LTSM	LTSM	LTS	LTSM
BIO-1: Impacts to nesting migratory birds and other protected bird species	LTSM	NI	LTSM	LTSM	LTSM	LTSM
BIO-2: Mortality of burrowing owls test	LTSM	NI	LTS	LTSM	LTSM	LTSM
BIO-3: Permanent impacts to riparian vegetation and seasonal wetlands	LTSM	NI	LTSM	LTSM	LTSM	LTSM

BIO-4: Damage to trees	LTSM	NI	LTSM	LTSM	LTSM	LTSM
HAZ-1: Release of pesticides and expose construction workers to residual agricultural soil contamination	LTSM	NI	LTSM	LTSM	LTSM	LTSM
NI – No Impact LTS – Less Than Significant Impact LTSM – Less Than Significant Impact with Mitigation SU – Significant and Unavoidable						

As seen above, none of the other project alternatives would avoid all significant environmental impacts. Any development on land would result in a significant and unavoidable impact to the loss of land designated as Prime Farmland. In addition, any construction on-site would result in soil disturbance, thereby resulting in potential hazardous materials impacts related to agricultural pesticides. Development that would affect trees to be retained would be required to conform to the City's Tree Ordinance and implement mitigation measures to avoid impacts to nesting raptors and migratory birds. Impacts to burrowing owls and riparian habitat would also occur.

The Reduced Scale - Data Center Only and Reduced Scale - Light Industrial Only Development Alternatives would generate significantly fewer traffic trips compared to both project options and impacts to freeways and intersections would not occur. Both Alternatives would likely be developed and operational prior to 2020 and, therefore, would result in a less than significant impact related to GHG emissions. As seen in Table 3.2-5: Operational Emissions for the Project, the Data Center would not result in ROG, $PM_{2.5}$, and PM_{10} emissions above established BAAQMD thresholds; however, the operation and maintenance of the data center generators would produce NOx emissions over the established thresholds. If the size of the light industrial development was reduced, the light industrial development would not result in ROG, NOx, $PM_{2.5}$, and PM_{10} emissions above established BAAQMD thresholds. As a result, the Reduced Scale – Light Industrial Development Only Alternative would be the environmentally superior alternative to the proposed project.

SECTION 10.0 REFERENCES

ABAG. *Plan Bay Area*. Table 2.1-5. Accessed April 18, 2016.

Association of Bay Area Governments. *Tsunami Inundation Emergency Planning Map for the San Francisco Bay Region.* <http://quake.abag.ca.gov/tsunamis>. Accessed November 17, 2016.

California Building Standards Commission. 2015 Triennial Code Adoption Cycle. Accessed December 7, 2016. http://www.bsc.ca.gov/.

California Department of Transportation. *California Scenic Highway Mapping System*. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ Accessed December 8, 2016.

California Natural Resources Agency. *Santa Clara County Important Farmlands 2012.* Accessed November 17, 2016. <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/scl12.pdf>

California State Board of Equalization. Taxable Gasoline, Diesel Fuel, Jet Fuel Ten Year Reports. Accessed December 7, 2016. http://www.boe.ca.gov/sptaxprog/spftrpts.htm.

California State Water Quality Control Board. Impaired Water Bodies. Accessed November 17, 2016. http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml?wbid=CAR2055004019990218133956.

Cardno ATC. *Phase I Environmental Site Assessment of Agricultural Land Adjacent to 800 Thomas Foon Chew Way.* March 20, 2015.

CEC. *Electricity and Natural Gas Demand Forecast*. Accessed December 7, 2016. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN206501_20151103T100153_Draft_Staff_Report_2015_Natural_Gas_Outlook.pdf.

CEC. Building Energy Efficiency Program. 2013. Accessed December 7, 2016. http://www.energy.ca.gov/title24/.

CEC. *California Energy Demand 2016-2026, Revised Electricity Forecast*. Accessed December 7, 2016. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN207439_20160115T152221_California_Energy_Demand_20162026_Revised_Electricity_Forecast.pdf.

CEC. California Energy Demand Updated Forecast 2015-2015. Accessed December 7, 2016. http://www.energy.ca.gov/2014publications/CEC-200-2014-009/CEC-200-2014-009-SD.pdf.

CEC. *Electricity and Natural Gas Demand Forecast*. Accessed December 8, 2016. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN206501_20151103T100153_Draft_Staff_Report_2015_Natural_Gas_Outlook.pdf.

CEC. Energy Almanac. Total Electricity System Power. Accessed December 7, 2016. http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html.

CEC. Energy Consumption Data Management System. Electricity Consumption by County. Accessed December 7, 2016. http://ecdms.energy.ca.gov/elecbycounty.aspx.

CEC. Natural Gas Consumption by County. Santa Clara County 2015 Data. Accessed December 7, 2016. http://ecdms.energy.ca.gov/gasbycounty.aspx.

CEC. Natural Gas Supply by Region. Accessed December 7, 2016. http://www.energyalmanac.ca.gov/naturalgas/natural_gas_supply.html.

City of San José. *Alviso Master Plan: A Specific Plan for the Alviso Community*. December 1998.

City of San José. Envision San José 2040 General Plan. November 2011.

City of San José. Envision San José 2040 General Plan Final Program EIR.

City of San José. Riparian Corridor Policy Study. May 1994.

City of San José Council Policy. *Post-Construction Hydromodification Management*. https://www.sanJoséca.gov/DocumentCenter/View/3916 Accessed November 30, 2016.

Department of Energy. Energy Independence & Security Act of 2007. Accessed December 7, 2016. http://www.afdc.energy.gov/laws/eisa.

Diesel Service & Supply. Diesel Fuel Consumption Chart. Accessed December 7, 2016. charthttp://www.dieselserviceandsupply.com/Diesel_Fuel_Consumption.aspx.

EIA. California Energy Consumption by End-Use Sector, 2014. Accessed December 7, 2016. http://www.eia.gov/beta/state/seds/data.cfm?incfile=/state/seds/sep_sum/html/sum_btu_1.html&sid=CA.

EIA. California Energy Consumption Estimates 2014. Accessed December 7, 2016. http://www.eia.gov/state/?sid=CA#tabs-2.

EIA. California State Profile and Energy Sources. Accessed December 7, 2016. https://www.eia.gov/state/analysis.cfm?sid=CA.

EIA. Frequently Asked Questions. Accessed December 7, 2016. https://www.eia.gov/tools/faqs/faq.cfm?id=23&t=10.

EIA. Natural Gas Conversion Calculator. Accessed December 7, 2016. https://www.eia.gov/kids/energy.cfm?page=about_energy_conversion_calculator-basics#natgascalc.

EIA. Natural Gas Summary. Accessed December 7, 2016. http://www.eia.gov/dnav/ng/ng_sum_lsum_dcu_SCA_a.htm.

EIA. Short-Term Energy and Fuels Outlook. Accessed December 7, 2016. http://www.eia.gov/forecasts/steo/report/us_oil.cfm.

EPA. Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles. Accessed December 7, 2016. http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_04_23.html.

Federal Emergency Management Agency. *Flood Insurance Rate Map. Map Number 06085C0066J.* February 19, 2014.

Illingworth & Rodkin. *237 Industrial Center San José, California Air Quality Assessment.* November 16, 2016.

National Highway Traffic Safety Administration. *Obama Administration Finalizes Historic 54.5 mpg Fuel Efficiency Standards*. Accessed December 7, 2016. http://www.nhtsa.gov/About+NHTSA/Press+Releases/2012/Obama+Administration+Finalizes+Historic+54.5+mpg+Fuel+Efficiency+Standards.

One Bay Area. *Future Place Type for Priority Development Areas in Santa Clara County*. Accessed May 10, 2017. <http://www.sanjoseca.gov/DocumentCenter/View/735>.

PG&E. Delivering Low-emission Energy. Accessed October 31, 2016. https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page.

PG&E. Exploring Clean Energy Solutions. Accessed December 7, 2016. https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page.

Public Law 110–140—December 19, 2007. Energy Independence & Security Act of 2007. Page 1449. Accessed December 7, 2016. http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf.

Santa Clara County. Santa Clara County Geologic Hazard Zones, Map 3. <https://www.sccgov.org/sites/dpd/DocsForms/Documents/GEO_GeohazardATLAS.pdf> Accessed May 19, 2017.

Santa Clara County Parks. *Countywide Trails Master Plan.* Accessed March 15, 2017. <https://www.sccgov.org/sites/parks/PlansProjects/Pages/countywide-trails-mstr-pln.aspx>.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/hmp_maps.htm Accessed November 11, 2016.

Santa Clara Valley Water District. *Anderson Dam and Reservoir 2009 Flood Inundation Maps. 2009.* http://www.valleywater.org/Services/AndersonDamAndReservoir.aspx Accessed November 17, 2016.

Santa Clara Valley Water District. *Lexington Reservoir 2009 Flood Inundation Maps. 2009.* http://www.valleywater.org/Services/LexingtonReservoirAndLenihanDam.aspx Accessed November 17, 2016.

State of California Department of Finance. *Census 2010.* 2010. <http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1&prodType=table> Accessed December 8, 2016.

United States Environmental Protection Agency. *California 303(d) Listed Waters.* http://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.impaired_waters_list?p_state=CA&p_cycle=2012 Accessed December 8, 2016.

Personal Communication:

Del Rio, Robert. Hexagon Transportation Consultants. Personal Communication. May 24, 2017.

SECTION 11.0 LEAD AGENCY AND CONSULTANTS

11.1 LEAD AGENCY

City of San Jose
Department of Planning, Building and Code Enforcement
Harry Freitas, Director of Planning, Building and Code Enforcement
Ned Thomas, Division Manager
Tracy Tam, Planning Project Manager
Kieulan Pham, Environmental Project Manager

11.2 CONSULTANTS

David J. Powers & Associates, Inc.
Environmental Consultants and Planners
San José, CA
Jodi Starbird, Principal
Shannon George, Senior Project Manager
Fiona Phung, Assistant Project Manager
Zach Dill, Graphic Artist

Archives & Architecture
Historic Consultants
San Jose, CA

Cardino ATC
Soils Testing and Analysis
San Ramon, CA

Cornerstone Earth Group
Hazardous Materials Consultants
Sunnyvale, CA

Hexagon Transportation Consultants
Transportation Consultants
San Jose, CA

HMH Engineers
Arborist
San Jose, CA

Holman & Associates
Cultural Resources Consultants
San Francisco, CA

H.T. Harvey and Associates
Biological Consultants
Los Gatos, CA

Illingworth & Rodkin
Air Quality, Greenhouse Gas, and Energy
Petaluma, CA

Kleinfelder
Geotechnical Consultants
San Jose, CA

Appendix 3.3A
Construction Emissions

Appendix 3.3-A, Table 1
Construction Emissions Summary and Threshold Comparison
Lightspeed SJC02
November 2019

Lightspeed SJC02 Construction Emissions

Construction	Criteria Pollutant Emissions					
	CO	VOC	NO_X	SO_X	PM_{10} [d]	$PM_{2.5}$ [d]
Average Daily Emissions (lb/day) [e]	70.7	9.71	53.5	0.24	50.0	9.60
Maximum Project Emissions (tons)	13.2	1.82	10.0	0.04	9.36	1.80
BAAQMD Thresholds of Significance (lb/day) [a]	--	54	54	--	82	54
Exceeds Threshold (Y/N)?	N	N	N	N	N	N

Construction	GHG Emissions			
	CO_2	N_2O	CH_4	CO_2e [b]
Average Daily Emissions (metric tons/day) [e]	10.0	3.46E-04	2.23E-04	10.2
Maximum Project Emissions (metric tons)	3,756	1.29E-01	8.34E-02	3,797
BAAQMD Thresholds of Significance (metric tons/year) [b, c]	--	--	--	10,000
Exceeds Threshold (Y/N)?	N	N	N	N

Notes:

[a] BAAQMD Thresholds of Significance taken from Table 2-1 of the 2017 CEQA Air Quality Guidelines (BAAQMD, 2017).

[b] The following global warming potentials were used to estimate CO_2 equivalent emissions, per 40 CFR Part 98, Table A-1:

CH_4 = 25
N_2O = 298

[c] BAAQMD does not have a GHG significance threshold for construction so, instead, the operation threshold was used. This threshold is applicable to stationary-source projects based on processes and equipment that would require an Air District permit to operate.

[d] These estimates conservatively include fugitive dust emissions, even though the significance threshold is specific to exhaust emissions only.

[e] Although peak daily emissions may be higher than what is reported here, the BAAQMD's significance thresholds are average daily thresholds. Accordingly, the results reported here are the total project emissions averaged over the entire construction duration.

Appendix 3.3-A, Table 2
Construction Emissions Summary by Source Category
Lightspeed SJC02
November 2019

CO Emissions

Emission Source	CO Emissions by Month																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Construction Equipment																	
Total (lb/month)	658.95	658.95	658.95	1,216.67	1,234.29	1,130.15	1,207.70	1,107.91	812.81	568.96	568.96	457.91	457.91	262.47	163.35	131.23	131.23
Total (lb/day)	29.95	29.95	29.95	55.30	56.10	51.37	54.90	50.36	36.95	25.86	25.86	20.81	20.81	11.93	7.42	5.97	5.97
Onsite Construction Vehicle																	
Total (lb/month)	21.95	21.95	21.95	21.95	3.42	2.58	2.58	2.58	2.58	2.35	0.80	0.80	0.80	0.80	0.80	0.80	0.40
Total (lb/day)	1.00	1.00	1.00	1.00	0.16	0.12	0.12	0.12	0.12	0.11	0.04	0.04	0.04	0.04	0.04	0.04	0.02
Offsite Construction Equipment																	
Total (lb/month)	744.47	744.47	744.47	1,152.33	1,017.57	913.44	823.49	723.70	706.26	467.16	405.00	735.02	539.55	539.55	539.55	495.59	32.12
Total (lb/day)	33.84	33.84	33.84	52.38	46.25	41.52	37.43	32.90	32.10	21.23	18.41	33.41	24.53	24.53	24.53	22.53	1.46
Offsite Construction Vehicle																	
Total (lb/month)	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	5.96	5.52	1.90	1.90	1.90	1.45	1.45	1.45	0.40
Total (lb/day)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.27	0.25	0.09	0.09	0.09	0.07	0.07	0.07	0.02
Onroad Construction Vehicle																	
Total (lb/month)	123.11	123.11	125.12	129.16	187.72	196.81	202.87	205.90	222.05	233.72	294.66	307.39	311.94	314.67	260.10	197.08	97.95
Total (lb/day)	5.60	5.60	5.69	5.87	8.53	8.95	9.22	9.36	10.09	10.62	13.39	13.97	14.18	14.30	11.82	8.96	4.45
Total Project CO Emissions (Construction Equipment and Vehicles)																	
Maximum Monthly Emissions (lb/month)	**1,551.05**	**1,551.05**	**1,553.07**	**2,522.68**	**2,445.58**	**2,245.55**	**2,239.21**	**2,042.65**	**1,749.66**	**1,277.71**	**1,271.32**	**1,503.02**	**1,312.10**	**1,118.93**	**965.25**	**826.15**	**262.09**
Maximum Daily Emissions (lb/day)	**70.50**	**70.50**	**70.59**	**114.67**	**111.16**	**102.07**	**101.78**	**92.85**	**79.53**	**58.08**	**57.79**	**68.32**	**59.64**	**50.86**	**43.87**	**37.55**	**11.91**
Maximum Project Emissions (tons)	**13.22**																
Average Daily Emissions (lb/day) [a]	**70.69**																

VOC Emissions

Emission Source	VOC Emissions by Month																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Construction Equipment																	
Total (lb/month)	83.92	83.92	83.92	175.35	189.51	178.07	200.52	174.34	105.03	76.77	76.77	72.55	72.55	40.45	23.78	20.23	20.23
Total (lb/day)	3.81	3.81	3.81	7.97	8.61	8.09	9.11	7.92	4.77	3.49	3.49	3.30	3.30	1.84	1.08	0.92	0.92
Onsite Construction Vehicle																	
Total (lb/month)	6.60	6.60	6.60	6.60	0.84	0.58	0.58	0.58	0.58	0.45	0.05	0.05	0.05	0.05	0.05	0.05	0.03
Total (lb/day)	0.30	0.30	0.30	0.30	0.04	0.03	0.03	0.03	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Construction Equipment																	
Total (lb/month)	85.14	85.14	85.14	160.38	157.21	145.76	125.21	99.03	89.90	57.48	52.33	120.12	92.78	92.78	92.78	83.35	3.56
Total (lb/day)	3.87	3.87	3.87	7.29	7.15	6.63	5.69	4.50	4.09	2.61	2.38	5.46	4.22	4.22	4.22	3.79	0.16
Offsite Construction Vehicle																	
Total (lb/month)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	1.43	1.11	0.27	0.27	0.27	0.17	0.17	0.17	0.03
Total (lb/day)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.07	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Onsite Paving																	
Total (lb/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	5.36	5.36	5.36	5.36	5.36
Total (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Onroad Construction Vehicle																	
Total (lb/month)	15.11	15.11	15.15	15.21	16.17	16.31	16.41	16.46	16.73	14.29	15.23	15.42	15.49	15.54	14.69	11.51	9.98
Total (lb/day)	0.69	0.69	0.69	0.69	0.73	0.74	0.75	0.75	0.76	0.65	0.69	0.70	0.70	0.71	0.67	0.52	0.45
Total Project VOC Emissions (Construction Equipment, Paving, and Vehicles)																	
Maximum Monthly Emissions (lb/month)	**191.25**	**191.25**	**191.28**	**358.02**	**364.21**	**341.21**	**343.20**	**290.89**	**213.67**	**150.10**	**144.66**	**213.78**	**186.51**	**154.35**	**136.84**	**120.67**	**39.18**
Maximum Daily Emissions (lb/day)	**8.69**	**8.69**	**8.69**	**16.27**	**16.55**	**15.51**	**15.60**	**13.22**	**9.71**	**6.82**	**6.58**	**9.72**	**8.48**	**7.02**	**6.22**	**5.48**	**1.78**
Maximum Project Emissions (tons)	**1.82**																
Average Daily Emissions (lb/day) [a]	**9.71**																

Construction Emissions Summary by Source Category
Lightspeed SJC02
November 2019

SO_x Emissions

Emission Source	SO_x Emissions by Month																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Construction Equipment																	
Total (lb/month)	1.68	1.68	1.68	2.92	3.20	3.06	3.07	2.70	1.73	1.34	1.34	1.27	1.27	0.83	0.46	0.41	0.41
Total (lb/day)	0.08	0.08	0.08	0.13	0.15	0.14	0.14	0.12	0.08	0.06	0.06	0.06	0.06	0.04	0.02	0.02	0.02
Onsite Construction Vehicle																	
Total (lb/month)	0.18	0.18	0.18	0.18	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (lb/day)	0.01	0.01	0.01	0.01	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
Offsite Construction Equipment																	
Total (lb/month)	1.57	1.57	1.57	2.61	2.49	2.34	1.99	1.62	1.48	1.00	0.91	2.53	2.03	2.03	2.03	1.85	0.04
Total (lb/day)	0.07	0.07	0.07	0.12	0.11	0.11	0.09	0.07	0.07	0.05	0.04	0.11	0.09	0.09	0.09	0.08	0.00
Offsite Construction Vehicle																	
Total (lb/month)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Total (lb/day)	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	0.00
Onroad Construction Vehicle																	
Total (lb/month)	1.50	1.50	1.51	1.52	1.68	1.71	1.72	1.73	1.78	1.84	2.03	2.06	2.08	2.09	1.92	1.39	1.09
Total (lb/day)	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.06	0.05
Total Project SO_x Emissions (Construction Equipment and Vehicles)																	
Maximum Monthly Emissions (lb/month)	**4.94**	**4.94**	**4.94**	**7.24**	**7.42**	**7.14**	**6.82**	**6.08**	**5.04**	**4.24**	**4.29**	**5.87**	**5.39**	**4.95**	**4.42**	**3.66**	**1.55**
Maximum Daily Emissions (lb/day)	**0.22**	**0.22**	**0.22**	**0.33**	**0.34**	**0.32**	**0.31**	**0.28**	**0.23**	**0.19**	**0.20**	**0.27**	**0.24**	**0.23**	**0.20**	**0.17**	**0.07**
Maximum Project Emissions (tons)	**0.04**																
Average Daily Emissions (lb/day) [a]	**0.24**																

NO_x Emissions

Emission Source	NO_x Emissions by Month																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Construction Equipment																	
Total (lb/month)	233.27	233.27	233.27	807.90	917.10	836.30	994.65	822.11	375.75	309.96	309.96	300.01	300.01	85.84	66.57	42.92	42.92
Total (lb/day)	10.60	10.60	10.60	36.72	41.69	38.01	45.21	37.37	17.08	14.09	14.09	13.64	13.64	3.90	3.03	1.95	1.95
Onsite Construction Vehicle																	
Total (lb/month)	78.20	78.20	78.20	78.20	9.45	6.33	6.33	6.33	6.33	6.04	0.07	0.07	0.07	0.07	0.07	0.07	0.03
Total (lb/day)	3.55	3.55	3.55	3.55	0.43	0.29	0.29	0.29	0.29	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Construction Equipment																	
Total (lb/month)	270.37	270.37	270.37	777.05	844.14	763.34	598.88	426.34	363.72	262.31	257.78	268.78	178.55	178.55	178.55	96.32	23.65
Total (lb/day)	12.29	12.29	12.29	35.32	38.37	34.70	27.22	19.38	16.53	11.92	11.72	12.22	8.12	8.12	8.12	4.38	1.08
Offsite Construction Vehicle																	
Total (lb/month)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	16.42	15.69	3.21	3.21	3.21	1.64	1.64	1.64	0.03
Total (lb/day)	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.75	0.71	0.15	0.15	0.15	0.07	0.07	0.07	0.00
Onroad Construction Vehicle																	
Total (lb/month)	419.81	419.81	419.96	420.27	424.69	425.37	425.83	426.06	427.28	373.32	377.72	378.64	378.96	379.16	375.22	276.26	269.10
Total (lb/day)	19.08	19.08	19.09	19.10	19.30	19.34	19.36	19.37	19.42	16.97	17.17	17.21	17.23	17.23	17.06	12.56	12.23
Total Project NO_x Emissions (Construction Equipment and Vehicles)																	
Maximum Monthly Emissions (lb/month)	**1,006.65**	**1,006.65**	**1,006.80**	**2,088.41**	**2,200.37**	**2,036.34**	**2,030.69**	**1,685.83**	**1,189.50**	**967.31**	**948.73**	**950.69**	**860.79**	**645.26**	**622.05**	**417.21**	**335.74**
Maximum Daily Emissions (lb/day)	**45.76**	**45.76**	**45.76**	**94.93**	**100.02**	**92.56**	**92.30**	**76.63**	**54.07**	**43.97**	**43.12**	**43.21**	**39.13**	**29.33**	**28.28**	**18.96**	**15.26**
Maximum Project Emissions (tons)	**10.00**																
Average Daily Emissions (lb/day) [a]	**53.47**																

Construction Emissions Summary by Source Category
Lightspeed SJC02
November 2019

PM_{10} Emissions

Emission Source	PM_{10} Emissions by Month																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Demolition Fugitive Dust																	
Total (lb/month)	28.30	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
Total (lb/day)	1.29	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
Onsite Construction Equipment																	
Total (lb/month)	8.36	8.36	8.36	37.35	42.23	36.57	43.99	37.44	21.27	17.60	17.60	14.66	14.66	4.50	3.91	2.25	2.25
Total (lb/day)	0.38	0.38	0.38	1.70	1.92	1.66	2.00	1.70	0.97	0.80	0.80	0.67	0.67	0.20	0.18	0.10	0.10
Onsite Construction Vehicle																	
Total (lb/month)	2.24	2.24	2.24	2.24	0.28	0.19	0.19	0.19	0.19	0.15	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Total (lb/day)	0.10	0.10	0.10	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive Dust																	
Total (lb/month)	2,089.32	2,089.32	2,089.32	2,094.72	393.11	315.76	315.76	315.76	315.76	310.37	155.67	155.67	155.67	155.67	155.67	154.69	77.35
Total (lb/day)	94.97	94.97	94.97	95.21	17.87	14.35	14.35	14.35	14.35	14.11	7.08	7.08	7.08	7.08	7.08	7.03	3.52
Offsite Construction Equipment																	
Total (lb/month)	11.36	11.36	11.36	35.77	38.42	32.76	26.52	19.98	18.36	14.62	14.49	11.65	6.08	6.08	6.08	2.96	1.66
Total (lb/day)	0.52	0.52	0.52	1.63	1.75	1.49	1.21	0.91	0.83	0.66	0.66	0.53	0.28	0.28	0.28	0.13	0.08
Offsite Construction Vehicle																	
Total (lb/month)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.47	0.35	0.09	0.09	0.09	0.06	0.06	0.06	0.01
Total (lb/day)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive Dust																	
Total (lb/month)	8.79	309.38	309.38	309.38	309.38	309.38	309.38	309.38	580.09	580.09	270.71	270.71	270.71	232.04	232.04	232.04	77.35
Total (lb/day)	0.00	14.06	14.06	14.06	14.06	14.06	14.06	14.06	26.37	26.37	12.31	12.31	12.31	10.55	10.55	10.55	3.52
Onroad Construction Vehicle																	
Total (lb/month)	72.85	72.85	73.58	75.03	96.10	99.37	101.55	102.64	108.45	121.82	146.15	151.23	153.05	154.14	132.35	100.25	60.68
Total (lb/day)	3.31	3.31	3.34	3.41	4.37	4.52	4.62	4.67	4.93	5.54	6.64	6.87	6.96	7.01	6.02	4.56	2.76
Total Project PM_{10} Emissions (Construction Equipment, Fugitive Dust, and Vehicles)																	
Maximum Monthly Emissions (lb/month)	**2,221.36**	**2,493.66**	**2,494.39**	**2,554.64**	**879.68**	**794.19**	**797.55**	**785.55**	**1,044.60**	**1,045.01**	**604.74**	**604.04**	**600.29**	**552.51**	**530.13**	**492.28**	**219.30**
Maximum Daily Emissions (lb/day)	**100.57**	**113.35**	**113.38**	**116.12**	**39.99**	**36.10**	**36.25**	**35.71**	**47.48**	**47.50**	**27.49**	**27.46**	**27.29**	**25.11**	**24.10**	**22.38**	**9.97**
Maximum Project Emissions (tons)	**9.36**																
Average Daily Emissions (lb/day) [a]	**50.04**																

Construction Emissions Summary by Source Category
Lightspeed SJC02
November 2019

$PM_{2.5}$ Emissions

Emission Source	$PM_{2.5}$ Emissions by Month																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Demolition Fugitive Dust																	
Total (lb/month)	4.29	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
Total (lb/day)	0.19	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
Onsite Construction Equipment																	
Total (lb/month)	30.96	30.96	30.96	74.68	80.80	74.08	87.21	76.94	48.09	33.28	33.28	29.48	29.48	14.01	9.12	7.01	7.01
Total (lb/day)	1.41	1.41	1.41	3.39	3.67	3.37	3.96	3.50	2.19	1.51	1.51	1.34	1.34	0.64	0.41	0.32	0.32
Onsite Construction Vehicle																	
Total (lb/month)	2.13	2.13	2.13	2.13	0.27	0.18	0.18	0.18	0.18	0.13	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total (lb/day)	0.10	0.10	0.10	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive Dust																	
Total (lb/month)	208.98	208.98	208.98	209.57	39.40	31.67	31.67	31.67	31.67	31.09	15.62	15.62	15.62	15.62	15.62	15.47	7.73
Total (lb/day)	9.50	9.50	9.50	9.53	1.79	1.44	1.44	1.44	1.44	1.41	0.71	0.71	0.71	0.71	0.71	0.70	0.35
Offsite Construction Equipment																	
Total (lb/month)	36.71	36.71	36.71	70.69	68.43	61.71	54.34	44.07	41.38	26.09	23.27	38.95	27.71	27.71	27.71	24.45	2.12
Total (lb/day)	1.67	1.67	1.67	3.21	3.11	2.80	2.47	2.00	1.88	1.19	1.06	1.77	1.26	1.26	1.26	1.11	0.10
Offsite Construction Vehicle																	
Total (lb/month)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.44	0.32	0.07	0.07	0.07	0.04	0.04	0.04	0.01
Total (lb/day)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive Dust																	
Total (lb/month)	30.94	30.94	30.94	30.94	30.94	30.94	30.94	30.94	58.01	58.01	27.07	27.07	27.07	23.20	23.20	23.20	7.73
Total (lb/day)	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	2.64	2.64	1.23	1.23	1.23	1.05	1.05	1.05	0.35
Onroad Construction Vehicle																	
Total (lb/month)	24.72	24.72	24.92	25.31	31.04	31.93	32.52	32.82	34.39	37.24	43.85	45.23	45.72	46.02	40.10	30.83	20.08
Total (lb/day)	1.12	1.12	1.13	1.15	1.41	1.45	1.48	1.49	1.56	1.69	1.99	2.06	2.08	0.00	0.00	0.00	0.91
Total Project $PM_{2.5}$ Emissions (Construction Equipment, Fugitive Dust, and Vehicles)																	
Maximum Monthly Emissions (lb/month)	**338.88**	**334.59**	**334.79**	**413.46**	**251.02**	**230.65**	**236.99**	**216.76**	**214.16**	**186.17**	**143.18**	**156.43**	**145.69**	**126.62**	**115.81**	**101.01**	**44.68**
Maximum Daily Emissions (lb/day)	**15.40**	**15.21**	**15.22**	**18.79**	**11.41**	**10.48**	**10.77**	**9.85**	**9.73**	**8.46**	**6.51**	**7.11**	**6.62**	**3.67**	**3.44**	**3.19**	**2.03**
Maximum Project Emissions (tons)	**1.80**																
Average Daily Emissions (lb/day) [a]	**9.60**																

Construction Emissions Summary by Source Category
Lightspeed SJC02
November 2019

CO_2 Emissions

Emission Source	CO_2 Emissions by Month																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Construction Equipment																	
Total (metric tons/month)	57.16	57.16	57.16	108.69	118.84	112.79	110.68	96.54	67.98	49.85	49.85	45.09	45.09	27.65	18.32	13.82	13.82
Total (metric tons/day)	2.60	2.60	2.60	4.94	5.40	5.13	5.03	4.39	3.09	2.27	2.27	2.05	2.05	1.26	0.83	0.63	0.63
Onsite Construction Vehicle																	
Total (metric tons/month)	3.99	3.99	3.99	3.99	0.53	0.38	0.38	0.38	0.38	0.37	0.06	0.06	0.06	0.06	0.06	0.06	0.03
Total (metric tons/day)	0.18	0.18	0.18	0.18	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Construction Equipment																	
Total (metric tons/month)	63.96	63.96	63.96	104.33	97.66	91.61	79.02	64.89	62.31	42.35	38.78	75.74	52.92	52.92	52.92	46.63	4.50
Total (metric tons/day)	2.91	2.91	2.91	4.74	4.44	4.16	3.59	2.95	2.83	1.93	1.76	3.44	2.41	2.41	2.41	2.12	0.20
Offsite Construction Vehicle																	
Total (metric tons/month)	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.92	0.90	0.24	0.24	0.24	0.16	0.16	0.16	0.03
Total (metric tons/day)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Onroad Construction Vehicle																	
Total (metric tons/month)	84.24	84.24	84.53	85.13	93.81	95.16	96.06	96.51	98.90	102.77	112.53	114.57	115.30	115.74	107.00	76.24	60.36
Total (metric tons/day)	3.83	3.83	3.84	3.87	4.26	4.33	4.37	4.39	4.50	4.67	5.12	5.21	5.24	0.06	0.06	0.06	2.74
Total Project CO_2 Emissions (Construction Equipment and Vehicles)																	
Maximum Monthly Emissions (metric tons/month)	**209.68**	**209.68**	**209.98**	**302.47**	**311.17**	**300.27**	**286.46**	**258.64**	**230.49**	**196.25**	**201.47**	**235.70**	**213.61**	**196.52**	**178.46**	**136.91**	**78.74**
Maximum Daily Emissions (metric tons/day)	**9.53**	**9.53**	**9.54**	**13.75**	**14.14**	**13.65**	**13.02**	**11.76**	**10.48**	**8.92**	**9.16**	**10.71**	**9.71**	**3.74**	**3.31**	**2.82**	**3.58**
Maximum Project Emissions (metric tons)	**3,756.47**																
Average Daily Emissions (metric tons/day) [a]	**10.04**																

N_2O Emissions

Emission Source	N_2O Emissions by Month																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Construction Equipment																	
Total (metric tons/month)	2.77E-03	2.77E-03	2.77E-03	5.27E-03	5.76E-03	5.47E-03	5.37E-03	4.68E-03	3.30E-03	2.42E-03	2.42E-03	2.19E-03	2.19E-03	1.34E-03	8.88E-04	6.70E-04	6.70E-04
Total (metric tons/day)	1.26E-04	1.26E-04	1.26E-04	2.40E-04	2.62E-04	2.49E-04	2.44E-04	2.13E-04	1.50E-04	1.10E-04	1.10E-04	9.94E-05	9.94E-05	6.09E-05	4.04E-05	3.05E-05	3.05E-05
Onsite Construction Vehicle																	
Total (metric tons/month)	1.20E-05	1.20E-05	1.20E-05	1.20E-05	2.66E-06	2.24E-06	2.24E-06	2.24E-06	2.24E-06	2.24E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	6.95E-07
Total (metric tons/day)	5.43E-07	5.43E-07	5.43E-07	5.43E-07	1.21E-07	1.02E-07	1.02E-07	1.02E-07	1.02E-07	1.02E-07	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	3.16E-08
Offsite Construction Equipment																	
Total (metric tons/month)	3.10E-03	3.10E-03	3.10E-03	5.06E-03	4.73E-03	4.44E-03	3.83E-03	3.15E-03	3.02E-03	2.05E-03	1.88E-03	3.67E-03	2.57E-03	2.57E-03	2.57E-03	2.26E-03	2.18E-04
Total (metric tons/day)	1.41E-04	1.41E-04	1.41E-04	2.30E-04	2.15E-04	2.02E-04	1.74E-04	1.43E-04	1.37E-04	9.33E-05	8.55E-05	1.67E-04	1.17E-04	1.17E-04	1.17E-04	1.03E-04	9.91E-06
Offsite Construction Vehicle																	
Total (metric tons/month)	2.37E-06	2.37E-06	2.37E-06	2.37E-06	2.37E-06	2.37E-06	2.37E-06	2.37E-06	3.85E-06	3.85E-06	2.16E-06	2.16E-06	2.16E-06	1.95E-06	1.95E-06	1.95E-06	6.95E-07
Total (metric tons/day)	1.08E-07	1.08E-07	1.08E-07	1.08E-07	1.08E-07	1.08E-07	1.08E-07	1.08E-07	1.75E-07	1.75E-07	9.82E-08	9.82E-08	9.82E-08	8.86E-08	8.86E-08	8.86E-08	3.16E-08
Onroad Construction Vehicle																	
Total (metric tons/month)	7.32E-04	7.32E-04	7.49E-04	7.84E-04	1.29E-03	1.37E-03	1.42E-03	1.44E-03	1.58E-03	1.93E-03	2.51E-03	2.64E-03	2.68E-03	2.71E-03	2.18E-03	1.63E-03	6.81E-04
Total (metric tons/day)	3.33E-05	3.33E-05	3.40E-05	3.56E-05	5.86E-05	6.21E-05	6.45E-05	6.57E-05	7.20E-05	8.78E-05	1.14E-04	1.20E-04	1.22E-04	1.23E-04	9.93E-05	7.40E-05	3.09E-05
Total Project N_2O Emissions (Construction Equipment and Vehicles)																	
Maximum Monthly Emissions (metric tons/month)	**6.62E-03**	**6.62E-03**	**6.64E-03**	**1.11E-02**	**1.18E-02**	**1.13E-02**	**1.06E-02**	**9.28E-03**	**7.91E-03**	**6.41E-03**	**6.82E-03**	**8.50E-03**	**7.43E-03**	**6.61E-03**	**5.64E-03**	**4.56E-03**	**1.57E-03**
Maximum Daily Emissions (metric tons/day)	**3.01E-04**	**3.01E-04**	**3.02E-04**	**5.06E-04**	**5.36E-04**	**5.13E-04**	**4.83E-04**	**4.22E-04**	**3.59E-04**	**2.91E-04**	**3.10E-04**	**3.86E-04**	**3.38E-04**	**3.01E-04**	**2.56E-04**	**2.07E-04**	**7.14E-05**
Maximum Project Emissions (metric tons)	**1.29E-01**																
Average Daily Emissions (metric tons/day) [a]	**3.46E-04**																

Construction Emissions Summary by Source Category
Lightspeed SJC02
November 2019

CH_4 Emissions

Emission Source	CH_4 Emissions by Month																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Construction Equipment																	
Total (metric tons/month)	1.91E-03	1.91E-03	1.91E-03	3.64E-03	3.98E-03	3.78E-03	3.71E-03	3.23E-03	2.28E-03	1.67E-03	1.67E-03	1.51E-03	1.51E-03	9.26E-04	6.14E-04	4.63E-04	4.63E-04
Total (metric tons/day)	8.70E-05	8.70E-05	8.70E-05	1.65E-04	1.81E-04	1.72E-04	1.69E-04	1.47E-04	1.04E-04	7.59E-05	7.59E-05	6.86E-05	6.86E-05	4.21E-05	2.79E-05	2.10E-05	2.10E-05
Onsite Construction Vehicle																	
Total (metric tons/month)	1.75E-05	1.75E-05	1.75E-05	1.75E-05	3.09E-06	2.43E-06	2.43E-06	2.43E-06	2.43E-06	2.43E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	5.63E-07
Total (metric tons/day)	2.34E-07	7.94E-07	7.94E-07	7.94E-07	1.40E-07	1.11E-07	1.11E-07	1.11E-07	1.11E-07	1.11E-07	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	2.56E-08
Offsite Construction Equipment																	
Total (metric tons/month)	2.14E-03	2.14E-03	2.14E-03	3.49E-03	3.27E-03	3.07E-03	2.65E-03	2.17E-03	2.09E-03	1.42E-03	1.30E-03	2.54E-03	1.77E-03	1.77E-03	1.77E-03	1.56E-03	1.51E-04
Total (metric tons/day)	9.74E-05	9.74E-05	9.74E-05	1.59E-04	1.49E-04	1.39E-04	1.20E-04	9.88E-05	9.49E-05	6.45E-05	5.91E-05	1.15E-04	8.06E-05	8.06E-05	8.06E-05	7.10E-05	6.85E-06
Offsite Construction Vehicle																	
Total (metric tons/month)	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06	5.70E-06	5.69E-06	2.26E-06	2.26E-06	2.26E-06	1.84E-06	1.84E-06	1.84E-06	5.63E-07
Total (metric tons/day)	2.83E-08	1.23E-07	1.23E-07	1.23E-07	1.23E-07	1.23E-07	1.23E-07	1.23E-07	2.59E-07	2.59E-07	1.03E-07	1.03E-07	1.03E-07	8.35E-08	8.35E-08	8.35E-08	2.56E-08
Onroad Construction Vehicle																	
Total (metric tons/month)	4.49E-04	4.49E-04	4.55E-04	4.67E-04	6.44E-04	6.71E-04	6.89E-04	6.98E-04	7.47E-04	8.68E-04	1.07E-03	1.11E-03	1.13E-03	1.14E-03	9.56E-04	7.18E-04	3.87E-04
Total (metric tons/day)	2.04E-05	2.04E-05	2.07E-05	2.12E-05	2.93E-05	3.05E-05	3.13E-05	3.17E-05	3.40E-05	3.95E-05	4.87E-05	5.07E-05	5.14E-05	5.18E-05	4.35E-05	3.27E-05	1.76E-05
Total Project CH_4 Emissions (Construction Equipment and Vehicles)																	
Maximum Monthly Emissions (metric tons/month)	**4.53E-03**	**4.53E-03**	**4.53E-03**	**7.62E-03**	**7.90E-03**	**7.52E-03**	**7.05E-03**	**6.11E-03**	**5.12E-03**	**3.96E-03**	**4.04E-03**	**5.17E-03**	**4.42E-03**	**3.84E-03**	**3.35E-03**	**2.75E-03**	**1.00E-03**
Maximum Daily Emissions (metric tons/day)	**2.05E-04**	**2.06E-04**	**2.06E-04**	**3.46E-04**	**3.59E-04**	**3.42E-04**	**3.20E-04**	**2.78E-04**	**2.33E-04**	**1.80E-04**	**1.84E-04**	**2.35E-04**	**2.01E-04**	**1.75E-04**	**1.52E-04**	**1.25E-04**	**4.55E-05**
Maximum Project Emissions (metric tons)	**8.34E-02**																
Average Daily Emissions (metric tons/day) [a]	**2.23E-04**																

Notes:
[a] The days per month for construction in the data above was provided by the Applicant's engineering contractor.

Appendix 3.3-A, Table 3
Number of Onsite Construction Equipment and Vehicles
Lightspeed SJC02
November 2019

Number of Onsite Construction Equipment for Lightspeed SJC02 Construction

Onsite Equipment	Number per Day [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
Excavator [b]	4	4	4	4	2	2	2	2	2	0	0	0	0	0	0	0	0
Grader	0	0	0	4	4	4	4	2	1	0	0	0	0	0	0	0	0
Cranes [c]	0	0	0	0	0	0	4	4	0	1	1	2	2	0	0	0	0
Backhoe	0	0	0	1	2	2	1	1	1	1	1	0	0	0	0	0	0
Rubber Tired Loader [d]	2	2	2	2	3	3	1	1	0	0	0	0	0	0	0	0	0
Forklift	0	0	0	1	2	2	2	2	3	3	3	3	3	2	2	1	1
Roller [e]	0	0	0	4	4	2	2	2	2	2	2	0	0	0	0	0	0
Bore/Drill Rigs [f]	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Other General Industrial Equipment [g]	0	0	0	1	1	1	2	2	2	1	1	1	1	0	0	0	0

Notes:
[a] Equipment counts presented above were provided by the Applicant's engineering contractor.
[b] The Hydraulic Hammer for the Excavator was not included in the above table, or resulting emissions estimates, as they are expected to be hydraulically-powered with negligible emissions.
[c] Numbers presented for Cranes include the equipment counts for the 75 Ton Hydraulic Crane, 35 Ton Hydraulic Crane, and Heavy Lift Lattice Boom Main Crane.
[d] Numbers presented for Rubber Tired Loader include the equipment counts for the Front End Loader.
[e] Numbers presented for Roller include the equipment counts for the Compactor.
[f] Numbers presented for Bore/Drill Rigs include the equipment counts for the Horizontal Directional Drill Equipment.
[g] Numbers presented for Other General Industrial Equipment include the equipment counts for the Light Towers.

Number of Onsite Vehicles for Lightspeed SJC02 Construction

Vehicle Type	Number per Day [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Pick-up Truck	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1
Dump Truck	25	25	25	25	3	2	2	2	2	2	0	0	0	0	0	0	0

Notes:
[a] Vehicle counts presented above were provided by the Applicant's engineering contractor.

Appendix 3.3-A, Table 4
Onsite Construction Equipment Emissions
Lightspeed SJC02
November 2019

Onsite Construction Equipment CO Emissions from Lightspeed SJC02 Construction

Onsite Equipment	CO Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	209.55	209.55	209.55	209.55	209.55	209.55	209.55	209.55	209.55	198.24	198.24	198.24	198.24	198.24	99.12	99.12	99.12
Excavator	359.45	359.45	359.45	359.45	179.73	179.73	179.73	179.73	179.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	199.59	199.59	199.59	199.59	99.79	49.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.00	0.00	0.00	0.00	0.00	0.00	232.69	232.69	0.00	54.53	54.53	109.05	109.05	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	62.69	125.38	125.38	62.69	62.69	62.69	62.16	62.16	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	89.95	89.95	89.95	89.95	134.92	134.92	44.97	44.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.00	0.00	0.00	32.46	64.91	64.91	64.91	64.91	97.37	96.35	96.35	96.35	96.35	64.23	64.23	32.12	32.12
Roller	0.00	0.00	0.00	208.27	208.27	104.13	104.13	104.13	104.13	103.42	103.42	0.00	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs	0.00	0.00	0.00	0.00	57.22	57.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other General Industrial Equipment	0.00	0.00	0.00	54.72	54.72	54.72	109.44	109.44	109.44	54.28	54.28	54.28	54.28	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**658.95**	**658.95**	**658.95**	**1,216.67**	**1,234.29**	**1,130.15**	**1,207.70**	**1,107.91**	**812.81**	**568.96**	**568.96**	**457.91**	**457.91**	**262.47**	**163.35**	**131.23**	**131.23**
Onsite Total (lb/day) [a]	**29.95**	**29.95**	**29.95**	**55.30**	**56.10**	**51.37**	**54.90**	**50.36**	**36.95**	**25.86**	**25.86**	**20.81**	**20.81**	**11.93**	**7.42**	**5.97**	**5.97**
Onsite Project Total (tons)	**5.71**																

Onsite Construction Equipment VOC Emissions from Lightspeed SJC02 Construction

Onsite Equipment	VOC Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	33.34	33.34	33.34	33.34	33.34	16.67	16.67	16.67
Excavator	26.91	26.91	26.91	26.91	13.45	13.45	13.45	13.45	13.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	52.36	52.36	52.36	52.36	26.18	13.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.00	0.00	0.00	0.00	0.00	0.00	49.91	49.91	0.00	11.34	11.34	22.68	22.68	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	5.76	11.52	11.52	5.76	5.76	5.76	5.15	5.15	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	20.56	20.56	20.56	20.56	30.84	30.84	10.28	10.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.00	0.00	0.00	3.96	7.93	7.93	7.93	7.93	11.89	10.67	10.67	10.67	10.67	7.11	7.11	3.56	3.56
Roller	0.00	0.00	0.00	22.88	22.88	11.44	11.44	11.44	11.44	10.41	10.41	0.00	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs	0.00	0.00	0.00	0.00	7.61	7.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other General Industrial Equipment	0.00	0.00	0.00	6.47	6.47	6.47	12.94	12.94	12.94	5.86	5.86	5.86	5.86	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**83.92**	**83.92**	**83.92**	**175.35**	**189.51**	**178.07**	**200.52**	**174.34**	**105.03**	**76.77**	**76.77**	**72.55**	**72.55**	**40.45**	**23.78**	**20.23**	**20.23**
Onsite Total (lb/day) [a]	**3.81**	**3.81**	**3.81**	**7.97**	**8.61**	**8.09**	**9.11**	**7.92**	**4.77**	**3.49**	**3.49**	**3.30**	**3.30**	**1.84**	**1.08**	**0.92**	**0.92**
Onsite Project Total (tons)	**0.84**																

Onsite Construction Equipment NO_X Emissions from Lightspeed SJC02 Construction

Onsite Equipment	NO_X Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	38.53	19.26	19.26	19.26
Excavator	30.28	30.28	30.28	30.28	15.14	15.14	15.14	15.14	15.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	345.08	345.08	345.08	345.08	172.54	86.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.00	0.00	0.00	0.00	0.00	0.00	301.51	301.51	0.00	75.38	75.38	150.76	150.76	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	4.53	9.05	9.05	4.53	4.53	4.53	4.53	4.53	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	164.46	164.46	164.46	164.46	246.69	246.69	82.23	82.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.00	0.00	0.00	23.65	47.31	47.31	47.31	47.31	70.96	70.96	70.96	70.96	70.96	47.31	47.31	23.65	23.65
Roller	0.00	0.00	0.00	161.60	161.60	80.80	80.80	80.80	80.80	80.80	80.80	0.00	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs	0.00	0.00	0.00	0.00	13.93	13.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other General Industrial Equipment	0.00	0.00	0.00	39.76	39.76	39.76	79.52	79.52	79.52	39.76	39.76	39.76	39.76	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**233.27**	**233.27**	**233.27**	**807.90**	**917.10**	**836.30**	**994.65**	**822.11**	**375.75**	**309.96**	**309.96**	**300.01**	**300.01**	**85.84**	**66.57**	**42.92**	**42.92**
Onsite Total (lb/day) [a]	**10.60**	**10.60**	**10.60**	**36.72**	**41.69**	**38.01**	**45.21**	**37.37**	**17.08**	**14.09**	**14.09**	**13.64**	**13.64**	**3.90**	**3.03**	**1.95**	**1.95**
Onsite Project Total (tons)	**3.46**																

Onsite Construction Equipment Emissions
Lightspeed SJC02
November 2019

Onsite Construction Equipment SO_X Emissions from Lightspeed SJC02 Construction

Onsite Equipment	SO_X Emissions (lb/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.37	0.37	0.37
Excavator	0.58	0.58	0.58	0.58	0.29	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	0.74	0.74	0.74	0.74	0.37	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.65	0.00	0.16	0.16	0.32	0.32	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	0.09	0.17	0.17	0.09	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	0.35	0.35	0.35	0.35	0.53	0.53	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.00	0.00	0.00	0.04	0.09	0.09	0.09	0.09	0.13	0.13	0.13	0.13	0.13	0.09	0.09	0.04	0.04
Roller	0.00	0.00	0.00	0.29	0.29	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other General Industrial Equipment	0.00	0.00	0.00	0.07	0.07	0.07	0.15	0.15	0.15	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**1.68**	**1.68**	**1.68**	**2.92**	**3.20**	**3.06**	**3.07**	**2.70**	**1.73**	**1.34**	**1.34**	**1.27**	**1.27**	**0.83**	**0.46**	**0.41**	**0.41**
Onsite Total (lb/day) [a]	**0.08**	**0.08**	**0.08**	**0.13**	**0.15**	**0.14**	**0.14**	**0.12**	**0.08**	**0.06**	**0.06**	**0.06**	**0.06**	**0.04**	**0.02**	**0.02**	**0.02**
Onsite Project Total (tons)	**0.01**																

Onsite Construction Equipment PM_{10} Emissions from Lightspeed SJC02 Construction

Onsite Equipment	PM_{10} Emissions (lb/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	0.59	0.59	0.59
Excavator	0.93	0.93	0.93	0.93	0.47	0.47	0.47	0.47	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	13.09	13.09	13.09	13.09	6.54	3.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.00	0.00	0.00	0.00	0.00	0.00	11.44	11.44	0.00	2.86	2.86	5.72	5.72	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	0.14	0.28	0.28	0.14	0.14	0.14	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	6.24	6.24	6.24	6.24	9.36	9.36	3.12	3.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.00	0.00	0.00	1.66	3.32	3.32	3.32	3.32	4.97	4.97	4.97	4.97	4.97	3.32	3.32	1.66	1.66
Roller	0.00	0.00	0.00	11.32	11.32	5.66	5.66	5.66	5.66	5.66	5.66	0.00	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other General Industrial Equipment	0.00	0.00	0.00	2.79	2.79	2.79	5.57	5.57	5.57	2.79	2.79	2.79	2.79	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**8.36**	**8.36**	**8.36**	**37.35**	**42.23**	**36.57**	**43.99**	**37.44**	**21.27**	**17.60**	**17.60**	**14.66**	**14.66**	**4.50**	**3.91**	**2.25**	**2.25**
Onsite Total (lb/day) [a]	**0.38**	**0.38**	**0.38**	**1.70**	**1.92**	**1.66**	**2.00**	**1.70**	**0.97**	**0.80**	**0.80**	**0.67**	**0.67**	**0.20**	**0.18**	**0.10**	**0.10**
Onsite Project Total (tons)	**0.16**																

Onsite Construction Equipment $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Onsite Equipment	$PM_{2.5}$ Emissions (lb/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	11.71	9.78	9.78	9.78	9.78	9.78	4.89	4.89	4.89
Excavator	11.88	11.88	11.88	11.88	5.94	5.94	5.94	5.94	5.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	20.53	20.53	20.53	20.53	10.26	5.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.00	0.00	0.00	0.00	0.00	0.00	22.48	22.48	0.00	4.97	4.97	9.94	9.94	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	3.36	6.72	6.72	3.36	3.36	3.36	2.82	2.82	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	7.37	7.37	7.37	7.37	11.06	11.06	3.69	3.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.00	0.00	0.00	2.44	4.89	4.89	4.89	4.89	7.33	6.35	6.35	6.35	6.35	4.23	4.23	2.12	2.12
Roller	0.00	0.00	0.00	13.45	13.45	6.72	6.72	6.72	6.72	5.96	5.96	0.00	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs	0.00	0.00	0.00	0.00	2.57	2.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other General Industrial Equipment	0.00	0.00	0.00	3.95	3.95	3.95	7.89	7.89	7.89	3.41	3.41	3.41	3.41	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**30.96**	**30.96**	**30.96**	**74.68**	**80.80**	**74.08**	**87.21**	**76.94**	**48.09**	**33.28**	**33.28**	**29.48**	**29.48**	**14.01**	**9.12**	**7.01**	**7.01**
Onsite Total (lb/day) [a]	**1.41**	**1.41**	**1.41**	**3.39**	**3.67**	**3.37**	**3.96**	**3.50**	**2.19**	**1.51**	**1.51**	**1.34**	**1.34**	**0.64**	**0.41**	**0.32**	**0.32**
Onsite Project Total (tons)	**0.35**																

Onsite Construction Equipment Emissions
Lightspeed SJC02
November 2019

Onsite Construction Equipment CO_2 Emissions from Lightspeed SJC02 Construction

Onsite Equipment	CO_2 Emissions (metric tons/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	18.64	18.64	18.64	18.64	18.64	18.64	18.64	18.64	18.64	18.65	18.65	18.65	18.65	18.65	9.33	9.33	9.33
Excavator	25.93	25.93	25.93	25.93	12.96	12.96	12.96	12.96	12.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0.00	0.00	0.00	28.27	28.27	28.27	28.27	14.13	7.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.00	0.00	0.00	0.00	0.00	0.00	19.69	19.69	0.00	4.91	4.91	9.81	9.81	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	3.57	7.14	7.14	3.57	3.57	3.57	3.57	3.57	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	12.59	12.59	12.59	12.59	18.89	18.89	6.30	6.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.00	0.00	0.00	4.49	8.99	8.99	8.99	8.99	13.48	13.49	13.49	13.49	13.49	8.99	8.99	4.50	4.50
Roller	0.00	0.00	0.00	12.10	12.10	6.05	6.05	6.05	6.05	6.10	6.10	0.00	0.00	0.00	0.00	0.00	0.00
Bore/Drill Rigs	0.00	0.00	0.00	0.00	8.75	8.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other General Industrial Equipment	0.00	0.00	0.00	3.11	3.11	3.11	6.21	6.21	6.21	3.13	3.13	3.13	3.13	0.00	0.00	0.00	0.00
Onsite Total (metric tons/month)	**57.16**	**57.16**	**57.16**	**108.69**	**118.84**	**112.79**	**110.68**	**96.54**	**67.98**	**49.85**	**49.85**	**45.09**	**45.09**	**27.65**	**18.32**	**13.82**	**13.82**
Onsite Total (metric tons/day) [a]	**2.60**	**2.60**	**2.60**	**4.94**	**5.40**	**5.13**	**5.03**	**4.39**	**3.09**	**2.27**	**2.27**	**2.05**	**2.05**	**1.26**	**0.83**	**0.63**	**0.63**
Onsite Project Total (metric tons)	**1,050.48**																

Onsite Construction Equipment N_2O Emissions from Lightspeed SJC02 Construction

Onsite Equipment	N_2O Emissions (metric tons/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	9.04E-04	4.52E-04	4.52E-04	4.52E-04
Excavator	1.26E-03	1.26E-03	1.26E-03	1.26E-03	6.29E-04	6.29E-04	6.29E-04	6.29E-04	6.29E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Grader	0.00E+00	0.00E+00	0.00E+00	1.37E-03	1.37E-03	1.37E-03	1.37E-03	6.85E-04	3.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cranes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.55E-04	9.55E-04	0.00E+00	2.38E-04	2.38E-04	4.76E-04	4.76E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Backhoe	0.00E+00	0.00E+00	0.00E+00	1.73E-04	3.46E-04	3.46E-04	1.73E-04	1.73E-04	1.73E-04	1.73E-04	1.73E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Rubber Tired Loader	6.10E-04	6.10E-04	6.10E-04	6.10E-04	9.16E-04	9.16E-04	3.05E-04	3.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Forklift	0.00E+00	0.00E+00	0.00E+00	2.18E-04	4.36E-04	4.36E-04	4.36E-04	4.36E-04	6.54E-04	6.54E-04	6.54E-04	6.54E-04	6.54E-04	4.36E-04	4.36E-04	2.18E-04	2.18E-04
Roller	0.00E+00	0.00E+00	0.00E+00	5.86E-04	5.86E-04	2.93E-04	2.93E-04	2.93E-04	2.93E-04	2.96E-04	2.96E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bore/Drill Rigs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.24E-04	4.24E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other General Industrial Equipment	0.00E+00	0.00E+00	0.00E+00	1.51E-04	1.51E-04	1.51E-04	3.01E-04	3.01E-04	3.01E-04	1.52E-04	1.52E-04	1.52E-04	1.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Total (metric tons/month)	**2.77E-03**	**2.77E-03**	**2.77E-03**	**5.27E-03**	**5.76E-03**	**5.47E-03**	**5.37E-03**	**4.68E-03**	**3.30E-03**	**2.42E-03**	**2.42E-03**	**2.19E-03**	**2.19E-03**	**1.34E-03**	**8.88E-04**	**6.70E-04**	**6.70E-04**
Onsite Total (metric tons/day) [a]	**1.26E-04**	**1.26E-04**	**1.26E-04**	**2.40E-04**	**2.62E-04**	**2.49E-04**	**2.44E-04**	**2.13E-04**	**1.50E-04**	**1.10E-04**	**1.10E-04**	**9.94E-05**	**9.94E-05**	**6.09E-05**	**4.04E-05**	**3.05E-05**	**3.05E-05**
Onsite Project Total (metric tons)	**5.09E-02**																

Onsite Construction Equipment CH_4 Emissions from Lightspeed SJC02 Construction

Onsite Equipment	CH_4 Emissions (metric tons/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	6.24E-04	6.24E-04	6.24E-04	6.24E-04	6.24E-04	6.24E-04	6.24E-04	6.24E-04	6.24E-04	6.25E-04	6.25E-04	6.25E-04	6.25E-04	6.25E-04	3.12E-04	3.12E-04	3.12E-04
Excavator	8.68E-04	8.68E-04	8.68E-04	8.68E-04	4.34E-04	4.34E-04	4.34E-04	4.34E-04	4.34E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Grader	0.00E+00	0.00E+00	0.00E+00	9.47E-04	9.47E-04	9.47E-04	9.47E-04	4.73E-04	2.37E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cranes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-04	6.60E-04	0.00E+00	1.64E-04	1.64E-04	3.29E-04	3.29E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Backhoe	0.00E+00	0.00E+00	0.00E+00	1.20E-04	2.39E-04	2.39E-04	1.20E-04	1.20E-04	1.20E-04	1.20E-04	1.20E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Rubber Tired Loader	4.22E-04	4.22E-04	4.22E-04	4.22E-04	6.33E-04	6.33E-04	2.11E-04	2.11E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Forklift	0.00E+00	0.00E+00	0.00E+00	1.51E-04	3.01E-04	3.01E-04	3.01E-04	3.01E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	3.01E-04	3.01E-04	1.51E-04	1.51E-04
Roller	0.00E+00	0.00E+00	0.00E+00	4.05E-04	4.05E-04	2.03E-04	2.03E-04	2.03E-04	2.03E-04	2.04E-04	2.04E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bore/Drill Rigs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.93E-04	2.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other General Industrial Equipment	0.00E+00	0.00E+00	0.00E+00	1.04E-04	1.04E-04	1.04E-04	2.08E-04	2.08E-04	2.08E-04	1.05E-04	1.05E-04	1.05E-04	1.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Total (metric tons/month)	**1.91E-03**	**1.91E-03**	**1.91E-03**	**3.64E-03**	**3.98E-03**	**3.78E-03**	**3.71E-03**	**3.23E-03**	**2.28E-03**	**1.67E-03**	**1.67E-03**	**1.51E-03**	**1.51E-03**	**9.26E-04**	**6.14E-04**	**4.63E-04**	**4.63E-04**
Onsite Total (metric tons/day) [a]	**8.70E-05**	**8.70E-05**	**8.70E-05**	**1.65E-04**	**1.81E-04**	**1.72E-04**	**1.69E-04**	**1.47E-04**	**1.04E-04**	**7.59E-05**	**7.59E-05**	**6.86E-05**	**6.86E-05**	**4.21E-05**	**2.79E-05**	**2.10E-05**	**2.10E-05**
Onsite Project Total (metric tons)	**3.52E-02**																

Notes:
[a] Per information provided by the Applicant's engineering contractor, the days per month are as follows: 22

Appendix 3.3-A, Table 5
Onsite Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Onsite Vehicle Exhaust CO Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.02
Onsite Dump Truck	0.81	0.81	0.81	0.81	0.10	0.07	0.07	0.07	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**0.85**	**0.85**	**0.85**	**0.85**	**0.14**	**0.11**	**0.11**	**0.11**	**0.11**	**0.09**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.02**
Vehicle Type	**CO Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.40
Onsite Dump Truck	17.89	17.89	17.89	17.89	2.15	1.43	1.43	1.43	1.43	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**18.78**	**18.78**	**18.78**	**18.78**	**3.04**	**2.32**	**2.32**	**2.32**	**2.32**	**2.09**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.40**
Onsite Project Total (tons)	**0.05**																

Onsite Vehicle Exhaust VOC Emissions from Lightspeed SJC02 Construction

Vehicle Type	VOC Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	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	0.00
Onsite Dump Truck	0.29	0.29	0.29	0.29	0.03	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**0.29**	**0.29**	**0.29**	**0.29**	**0.04**	**0.03**	**0.03**	**0.03**	**0.03**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	**VOC Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.03
Onsite Dump Truck	6.30	6.30	6.30	6.30	0.76	0.50	0.50	0.50	0.50	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**6.35**	**6.35**	**6.35**	**6.35**	**0.81**	**0.56**	**0.56**	**0.56**	**0.56**	**0.43**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.03**
Onsite Project Total (tons)	**0.01**																

Onsite Vehicle Exhaust SO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	SO_X Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	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	0.00
Onsite Dump Truck	0.01	0.01	0.01	0.01	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
Onsite Total (lb/day)	**0.01**	**0.01**	**0.01**	**0.01**	**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**
Vehicle Type	**SO_X Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	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	0.00
Onsite Dump Truck	0.17	0.17	0.17	0.17	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**0.17**	**0.17**	**0.17**	**0.17**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Onsite Project Total (tons)	**0.00**																

Onsite Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Onsite Vehicle Exhaust NO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	NO_X Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Pick-up Truck	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	0.00
Onsite Dump Truck	3.39	3.39	3.39	3.39	0.41	0.27	0.27	0.27	0.27	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**3.39**	**3.39**	**3.39**	**3.39**	**0.41**	**0.27**	**0.27**	**0.27**	**0.27**	**0.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	NO_X Emissions (lb/month) [a]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Pick-up Truck	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.03
Onsite Dump Truck	74.61	74.61	74.61	74.61	8.95	5.97	5.97	5.97	5.97	5.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**74.69**	**74.69**	**74.69**	**74.69**	**9.03**	**6.05**	**6.05**	**6.05**	**6.05**	**5.77**	**0.07**	**0.07**	**0.07**	**0.07**	**0.07**	**0.07**	**0.03**
Onsite Project Total (tons)	**0.17**																

Onsite Vehicle Exhaust and Vehicle Wear PM_{10} Emissions from Lightspeed SJC02 Construction

Vehicle Type	PM_{10} Emissions (lb/day) [b]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Pick-up Truck	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	0.00
Onsite Dump Truck	0.10	0.10	0.10	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**0.10**	**0.10**	**0.10**	**0.10**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	PM_{10} Emissions (lb/month) [a, b]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Pick-up Truck	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Onsite Dump Truck	2.22	2.22	2.22	2.22	0.27	0.18	0.18	0.18	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**2.23**	**2.23**	**2.23**	**2.23**	**0.28**	**0.19**	**0.19**	**0.19**	**0.19**	**0.15**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.01**
Onsite Project Total (tons)	**0.01**																

Onsite Vehicle Exhaust and Vehicle Wear $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Vehicle Type	$PM_{2.5}$ Emissions (lb/day) [b]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Pick-up Truck	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	0.00
Onsite Dump Truck	0.10	0.10	0.10	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**0.10**	**0.10**	**0.10**	**0.10**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	$PM_{2.5}$ Emissions (lb/month) [a, b]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Pick-up Truck	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Onsite Dump Truck	2.12	2.12	2.12	2.12	0.25	0.17	0.17	0.17	0.17	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**2.13**	**2.13**	**2.13**	**2.13**	**0.27**	**0.18**	**0.18**	**0.18**	**0.18**	**0.13**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
Onsite Project Total (tons)	**0.00**																

Onsite Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Onsite Vehicle Exhaust CO_2 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO_2 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	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	0.00
Onsite Dump Truck	0.17	0.17	0.17	0.17	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (metric tons/day)	**0.17**	**0.17**	**0.17**	**0.17**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	**CO_2 Emissions (metric tons/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.03
Onsite Dump Truck	3.65	3.65	3.65	3.65	0.44	0.29	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (metric tons/month)	**3.71**	**3.71**	**3.71**	**3.71**	**0.50**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.03**
Onsite Project Total (metric tons)	**17.48**																

Onsite Vehicle Exhaust N_2O Emissions from Lightspeed SJC02 Construction

Vehicle Type	N_2O Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	6.32E-08	3.16E-08
Onsite Dump Truck	4.80E-07	4.80E-07	4.80E-07	4.80E-07	5.76E-08	3.84E-08	3.84E-08	3.84E-08	3.84E-08	3.84E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Total (metric tons/day)	**5.43E-07**	**5.43E-07**	**5.43E-07**	**5.43E-07**	**1.21E-07**	**1.02E-07**	**1.02E-07**	**1.02E-07**	**1.02E-07**	**1.02E-07**	**6.32E-08**	**6.32E-08**	**6.32E-08**	**6.32E-08**	**6.32E-08**	**6.32E-08**	**3.16E-08**
Vehicle Type	**N_2O Emissions (metric tons/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	1.39E-06	6.95E-07
Onsite Dump Truck	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.27E-06	8.45E-07	8.45E-07	8.45E-07	8.45E-07	8.45E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Total (metric tons/month)	**1.20E-05**	**1.20E-05**	**1.20E-05**	**1.20E-05**	**2.66E-06**	**2.24E-06**	**2.24E-06**	**2.24E-06**	**2.24E-06**	**2.24E-06**	**1.39E-06**	**1.39E-06**	**1.39E-06**	**1.39E-06**	**1.39E-06**	**1.39E-06**	**6.95E-07**
Onsite Project Total (metric tons)	**7.07E-05**																

Onsite Vehicle Exhaust CH_4 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CH_4 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	5.12E-08	2.56E-08
Onsite Dump Truck	5.10E-07	5.10E-07	5.10E-07	5.10E-07	6.12E-08	4.08E-08	4.08E-08	4.08E-08	4.08E-08	4.08E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Total (metric tons/day)	**1.15E-09**	**5.61E-07**	**5.61E-07**	**5.61E-07**	**1.12E-07**	**9.20E-08**	**9.20E-08**	**9.20E-08**	**9.20E-08**	**9.20E-08**	**5.12E-08**	**5.12E-08**	**5.12E-08**	**5.12E-08**	**5.12E-08**	**5.12E-08**	**2.56E-08**
Vehicle Type	**CH_4 Emissions (metric tons/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	5.63E-07
Onsite Dump Truck	1.12E-05	1.12E-05	1.12E-05	1.12E-05	1.35E-06	8.98E-07	8.98E-07	8.98E-07	8.98E-07	8.98E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Total (metric tons/month)	**1.23E-05**	**1.23E-05**	**1.23E-05**	**1.23E-05**	**2.47E-06**	**2.02E-06**	**2.02E-06**	**2.02E-06**	**2.02E-06**	**2.02E-06**	**1.13E-06**	**1.13E-06**	**1.13E-06**	**1.13E-06**	**1.13E-06**	**1.13E-06**	**5.63E-07**
Onsite Project Total (metric tons)	**6.93E-05**																

Notes:
[a] The days per month for construction in the data above was provided by the Applicant's engineering contractor.
[b] PM_{10} and $PM_{2.5}$ Emissions include emissions from exhaust and tire and brake wear.

Appendix 3.3-A, Table 6
Onsite Vehicle Idling Emissions
Lightspeed SJC02
November 2019

Onsite Vehicle Idling CO Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	0.14	0.14	0.14	0.14	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**0.14**	**0.14**	**0.14**	**0.14**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	**CO Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	3.17	3.17	3.17	3.17	0.38	0.25	0.25	0.25	0.25	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**3.17**	**3.17**	**3.17**	**3.17**	**0.38**	**0.25**	**0.25**	**0.25**	**0.25**	**0.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Onsite Project Total (tons)	**0.01**																

Onsite Vehicle Idling VOC Emissions from Lightspeed SJC02 Construction

Vehicle Type	VOC Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	0.01	0.01	0.01	0.01	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
Onsite Total (lb/day)	**0.01**	**0.01**	**0.01**	**0.01**	**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**
Vehicle Type	**VOC Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	0.24	0.24	0.24	0.24	0.03	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**0.24**	**0.24**	**0.24**	**0.24**	**0.03**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Onsite Project Total (tons)	**0.00**																

Onsite Vehicle Idling SO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	SO_X Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	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	0.00
Onsite Total (lb/day)	**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**	**0.00**
Vehicle Type	**SO_X Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	0.01	0.01	0.01	0.01	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
Onsite Total (lb/month)	**0.01**	**0.01**	**0.01**	**0.01**	**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**
Onsite Project Total (tons)	**0.00**																

Onsite Vehicle Idling NO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	NO_X Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	0.16	0.16	0.16	0.16	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**0.16**	**0.16**	**0.16**	**0.16**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	**NO_X Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	3.51	3.51	3.51	3.51	0.42	0.28	0.28	0.28	0.28	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**3.51**	**3.51**	**3.51**	**3.51**	**0.42**	**0.28**	**0.28**	**0.28**	**0.28**	**0.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Onsite Project Total (tons)	**0.01**																

Onsite Vehicle Idling Emissions
Lightspeed SJC02
November 2019

Onsite Vehicle Idling PM_{10} Emissions from Lightspeed SJC02 Construction

Vehicle Type	PM_{10} Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	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	0.00
Onsite Total (lb/day)	**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**	**0.00**
Vehicle Type	**PM_{10} Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	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	0.00
Onsite Total (lb/month)	**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**	**0.00**
Onsite Project Total (tons)	**0.00**																

Onsite Vehicle Idling $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Vehicle Type	$PM_{2.5}$ Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	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	0.00
Onsite Total (lb/day)	**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**	**0.00**
Vehicle Type	**$PM_{2.5}$ Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	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	0.00
Onsite Total (lb/month)	**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**	**0.00**
Onsite Project Total (tons)	**0.00**																

Onsite Vehicle Idling CO_2 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO_2 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	0.01	0.01	0.01	0.01	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
Onsite Total (metric tons/day)	**0.01**	**0.01**	**0.01**	**0.01**	**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**
Vehicle Type	**CO_2 Emissions (metric tons/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	0.28	0.28	0.28	0.28	0.03	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (metric tons/month)	**0.28**	**0.28**	**0.28**	**0.28**	**0.03**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Onsite Project Total (metric tons)	**1.27**																

Onsite Vehicle Idling CH_4 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CH_4 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	2.33E-07	2.33E-07	2.33E-07	2.33E-07	2.80E-08	1.87E-08	1.87E-08	1.87E-08	1.87E-08	1.85E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Total (metric tons/day)	**2.33E-07**	**2.33E-07**	**2.33E-07**	**2.33E-07**	**2.80E-08**	**1.87E-08**	**1.87E-08**	**1.87E-08**	**1.87E-08**	**1.85E-08**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Vehicle Type	**CH_4 Emissions (metric tons/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Dump Truck [a]	5.13E-06	5.13E-06	5.13E-06	5.13E-06	6.16E-07	4.10E-07	4.10E-07	4.10E-07	4.10E-07	4.08E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Total (metric tons/month)	**5.13E-06**	**5.13E-06**	**5.13E-06**	**5.13E-06**	**6.16E-07**	**4.10E-07**	**4.10E-07**	**4.10E-07**	**4.10E-07**	**4.08E-07**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Onsite Project Total (metric tons)	**2.32E-05**																

Notes:

[a] It is estimated that each onsite dump truck idles for approximately 5 minutes each day, or: 0.083 idle-hrs/day.

[b] The days per month for construction in the data above was provided by the Applicant's engineering contractor, as presented in Appendix 3.3-A, Table 11.

Appendix 3.3-A, Table 7
Number of Offsite Construction Equipment and Vehicles
Lightspeed SJC02
November 2019

Number of Offsite Construction Equipment for Lightspeed SJC02 Construction

Offsite Equipment	Number per Day [a]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
Concrete Truck	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	5	0
Excavator [b]	4	4	4	4	2	2	2	2	2	0	0	0	0	0	0	0	0
Grader	0	0	0	4	4	4	4	2	1	0	0	0	0	0	0	0	0
Backhoe	2	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	0
Rubber Tired Loader [c]	2	2	2	2	3	3	1	1	1	1	1	1	1	1	1	0	0
Forklift	2	2	2	2	2	2	2	2	3	3	3	3	0	0	0	0	1
Roller [d]	0	0	0	4	4	2	2	2	2	2	2	0	0	0	0	0	0
Bore/Drill Rigs [e]	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0

Notes:

[a] Equipment counts presented above were provided by the Applicant's engineering contractor.

[b] The Hydraulic Hammer for the Excavator was not included in the above table, or resulting emissions estimates, as they are expected to be hydraulically-powered with negligible emissions.

[c] Numbers presented for Rubber Tired Loader include the equipment counts for the Front End Loader.

[d] Numbers presented for Roller include the equipment counts for the Compactor.

[e] Numbers presented for Bore/Drill Rigs include the equipment counts for the Horizontal Directional Drill Equipment.

Number of Offsite Vehicles for Lightspeed SJC02 Construction

Vehicle Type	Number per Day [a]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Pick-up Truck	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	2
Dump Truck	3	3	3	3	3	3	3	3	10	10	2	2	2	1	1	1	0

Notes:

[a] Vehicle counts presented above were provided by the Applicant's engineering contractor.

Appendix 3.3-A, Table 8
Offsite Construction Equipment Emissions
Lightspeed SJC02
November 2019

Offsite Construction Equipment CO Emissions from Lightspeed SJC02 Construction

Offsite Equipment	CO Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	104.78	104.78	104.78	104.78	104.78	104.78	104.78	104.78	104.78	99.12	99.12	99.12	0.00	0.00	0.00	0.00	0.00
Excavator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	495.59	495.59	495.59	495.59	495.59	0.00
Grader	359.45	359.45	359.45	359.45	179.73	179.73	179.73	179.73	179.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	199.59	199.59	199.59	199.59	99.79	49.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	125.38	125.38	125.38	125.38	125.38	125.38	125.38	125.38	125.38	124.31	62.16	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	89.95	89.95	89.95	89.95	134.92	134.92	44.97	44.97	44.97	43.96	43.96	43.96	43.96	43.96	43.96	0.00	0.00
Roller	64.91	64.91	64.91	64.91	64.91	64.91	64.91	64.91	97.37	96.35	96.35	96.35	0.00	0.00	0.00	0.00	32.12
Bore/Drill Rigs	0.00	0.00	0.00	208.27	208.27	104.13	104.13	104.13	104.13	103.42	103.42	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (lb/month)	**744.47**	**744.47**	**744.47**	**1,152.33**	**1,017.57**	**913.44**	**823.49**	**723.70**	**706.26**	**467.16**	**405.00**	**735.02**	**539.55**	**539.55**	**539.55**	**495.59**	**32.12**
Offsite Total (lb/day) [a]	**33.84**	**33.84**	**33.84**	**52.38**	**46.25**	**41.52**	**37.43**	**32.90**	**32.10**	**21.23**	**18.41**	**33.41**	**24.53**	**24.53**	**24.53**	**22.53**	**1.46**
Offsite Project Total (tons)	**5.66**																

Offsite Construction Equipment VOC Emissions from Lightspeed SJC02 Construction

Offsite Equipment	VOC Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	18.23	18.23	18.23	18.23	18.23	18.23	18.23	18.23	18.23	16.67	16.67	16.67	0.00	0.00	0.00	0.00	0.00
Excavator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.35	83.35	83.35	83.35	83.35	0.00
Grader	26.91	26.91	26.91	26.91	13.45	13.45	13.45	13.45	13.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	52.36	52.36	52.36	52.36	26.18	13.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	11.52	10.30	5.15	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	20.56	20.56	20.56	20.56	30.84	30.84	10.28	10.28	10.28	9.43	9.43	9.43	9.43	9.43	9.43	0.00	0.00
Roller	7.93	7.93	7.93	7.93	7.93	7.93	7.93	7.93	11.89	10.67	10.67	10.67	0.00	0.00	0.00	0.00	3.56
Bore/Drill Rigs	0.00	0.00	0.00	22.88	22.88	11.44	11.44	11.44	11.44	10.41	10.41	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (lb/month)	**85.14**	**85.14**	**85.14**	**160.38**	**157.21**	**145.76**	**125.21**	**99.03**	**89.90**	**57.48**	**52.33**	**120.12**	**92.78**	**92.78**	**92.78**	**83.35**	**3.56**
Offsite Total (lb/day) [a]	**3.87**	**3.87**	**3.87**	**7.29**	**7.15**	**6.63**	**5.69**	**4.50**	**4.09**	**2.61**	**2.38**	**5.46**	**4.22**	**4.22**	**4.22**	**3.79**	**0.16**
Offsite Project Total (tons)	**0.81**																

Offsite Construction Equipment NO_X Emissions from Lightspeed SJC02 Construction

Offsite Equipment	NO_X Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	19.26	0.00	0.00	0.00	0.00	0.00
Excavator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.32	96.32	96.32	96.32	96.32	0.00
Grader	30.28	30.28	30.28	30.28	15.14	15.14	15.14	15.14	15.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	345.08	345.08	345.08	345.08	172.54	86.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	4.53	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	164.46	164.46	164.46	164.46	246.69	246.69	82.23	82.23	82.23	82.23	82.23	82.23	82.23	82.23	82.23	0.00	0.00
Roller	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31	70.96	70.96	70.96	70.96	0.00	0.00	0.00	0.00	23.65
Bore/Drill Rigs	0.00	0.00	0.00	161.60	161.60	80.80	80.80	80.80	80.80	80.80	80.80	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (lb/month)	**270.37**	**270.37**	**270.37**	**777.05**	**844.14**	**763.34**	**598.88**	**426.34**	**363.72**	**262.31**	**257.78**	**268.78**	**178.55**	**178.55**	**178.55**	**96.32**	**23.65**
Offsite Total (lb/day) [a]	**12.29**	**12.29**	**12.29**	**35.32**	**38.37**	**34.70**	**27.22**	**19.38**	**16.53**	**11.92**	**11.72**	**12.22**	**8.12**	**8.12**	**8.12**	**4.38**	**1.08**
Offsite Project Total (tons)	**3.01**																

Offsite Construction Equipment Emissions
Lightspeed SJC02
November 2019

Offsite Construction Equipment SO_X Emissions from Lightspeed SJC02 Construction

Offsite Equipment	SO_X Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.00	0.00	0.00	0.00	0.00
Excavator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.85	1.85	1.85	1.85	1.85	0.00
Grader	0.58	0.58	0.58	0.58	0.29	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	0.74	0.74	0.74	0.74	0.37	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0.35	0.35	0.35	0.35	0.53	0.53	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.00	0.00
Roller	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.13	0.13	0.13	0.13	0.00	0.00	0.00	0.00	0.04
Bore/Drill Rigs	0.00	0.00	0.00	0.29	0.29	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (lb/month)	**1.57**	**1.57**	**1.57**	**2.61**	**2.49**	**2.34**	**1.99**	**1.62**	**1.48**	**1.00**	**0.91**	**2.53**	**2.03**	**2.03**	**2.03**	**1.85**	**0.04**
Offsite Total (lb/day) [a]	**0.07**	**0.07**	**0.07**	**0.12**	**0.11**	**0.11**	**0.09**	**0.07**	**0.07**	**0.05**	**0.04**	**0.11**	**0.09**	**0.09**	**0.09**	**0.08**	**0.00**
Offsite Project Total (tons)	**0.01**																

Offsite Construction Equipment PM_{10} Emissions from Lightspeed SJC02 Construction

Offsite Equipment	PM_{10} Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.00	0.00	0.00	0.00	0.00
Excavator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.96	2.96	2.96	2.96	2.96	0.00
Grader	0.93	0.93	0.93	0.93	0.47	0.47	0.47	0.47	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	13.09	13.09	13.09	13.09	6.54	3.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.14	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	6.24	6.24	6.24	6.24	9.36	9.36	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	0.00	0.00
Roller	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	4.97	4.97	4.97	4.97	0.00	0.00	0.00	0.00	1.66
Bore/Drill Rigs	0.00	0.00	0.00	11.32	11.32	5.66	5.66	5.66	5.66	5.66	5.66	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (lb/month)	**11.36**	**11.36**	**11.36**	**35.77**	**38.42**	**32.76**	**26.52**	**19.98**	**18.36**	**14.62**	**14.49**	**11.65**	**6.08**	**6.08**	**6.08**	**2.96**	**1.66**
Offsite Total (lb/day) [a]	**0.52**	**0.52**	**0.52**	**1.63**	**1.75**	**1.49**	**1.21**	**0.91**	**0.83**	**0.66**	**0.66**	**0.53**	**0.28**	**0.28**	**0.28**	**0.13**	**0.08**
Offsite Project Total (tons)	**0.13**																

Offsite Construction Equipment $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Offsite Equipment	$PM_{2.5}$ Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Water Truck	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	4.89	4.89	4.89	0.00	0.00	0.00	0.00	0.00
Excavator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.45	24.45	24.45	24.45	24.45	0.00
Grader	11.88	11.88	11.88	11.88	5.94	5.94	5.94	5.94	5.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	20.53	20.53	20.53	20.53	10.26	5.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	5.64	2.82	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	7.37	7.37	7.37	7.37	11.06	11.06	3.69	3.69	3.69	3.26	3.26	3.26	3.26	3.26	3.26	0.00	0.00
Roller	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	7.33	6.35	6.35	6.35	0.00	0.00	0.00	0.00	2.12
Bore/Drill Rigs	0.00	0.00	0.00	13.45	13.45	6.72	6.72	6.72	6.72	5.96	5.96	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (lb/month)	**36.71**	**36.71**	**36.71**	**70.69**	**68.43**	**61.71**	**54.34**	**44.07**	**41.38**	**26.09**	**23.27**	**38.95**	**27.71**	**27.71**	**27.71**	**24.45**	**2.12**
Offsite Total (lb/day) [a]	**1.67**	**1.67**	**1.67**	**3.21**	**3.11**	**2.80**	**2.47**	**2.00**	**1.88**	**1.19**	**1.06**	**1.77**	**1.26**	**1.26**	**1.26**	**1.11**	**0.10**
Offsite Project Total (tons)	**0.32**																

Offsite Construction Equipment Emissions
Lightspeed SJC02
November 2019

Offsite Construction Equipment CO_2 Emissions from Lightspeed SJC02 Construction

Offsite Equipment	CO_2 Emissions (metric tons/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.33	9.33	9.33	0.00	0.00	0.00	0.00	0.00
Excavator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.63	46.63	46.63	46.63	46.63	0.00
Grader	25.93	25.93	25.93	25.93	12.96	12.96	12.96	12.96	12.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0.00	0.00	0.00	28.27	28.27	28.27	28.27	14.13	7.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loader	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	3.57	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	12.59	12.59	12.59	12.59	18.89	18.89	6.30	6.30	6.30	6.29	6.29	6.29	6.29	6.29	6.29	0.00	0.00
Roller	8.99	8.99	8.99	8.99	8.99	8.99	8.99	8.99	13.48	13.49	13.49	13.49	0.00	0.00	0.00	0.00	4.50
Bore/Drill Rigs	0.00	0.00	0.00	12.10	12.10	6.05	6.05	6.05	6.05	6.10	6.10	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (metric tons/month)	**63.96**	**63.96**	**63.96**	**104.33**	**97.66**	**91.61**	**79.02**	**64.89**	**62.31**	**42.35**	**38.78**	**75.74**	**52.92**	**52.92**	**52.92**	**46.63**	**4.50**
Offsite Total (metric tons/day) [a]	**2.91**	**2.91**	**2.91**	**4.74**	**4.44**	**4.16**	**3.59**	**2.95**	**2.83**	**1.93**	**1.76**	**3.44**	**2.41**	**2.41**	**2.41**	**2.12**	**0.20**
Offsite Project Total (metric tons)	**1,058.47**																

Offsite Construction Equipment N_2O Emissions from Lightspeed SJC02 Construction

Offsite Equipment	N_2O Emissions (metric tons/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Excavator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.26E-03	2.26E-03	2.26E-03	2.26E-03	2.26E-03	0.00E+00
Grader	1.26E-03	1.26E-03	1.26E-03	1.26E-03	6.29E-04	6.29E-04	6.29E-04	6.29E-04	6.29E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Backhoe	0.00E+00	0.00E+00	0.00E+00	1.37E-03	1.37E-03	1.37E-03	1.37E-03	6.85E-04	3.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Rubber Tired Loader	3.46E-04	3.46E-04	3.46E-04	3.46E-04	3.46E-04	3.46E-04	3.46E-04	3.46E-04	3.46E-04	3.46E-04	1.73E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Forklift	6.10E-04	6.10E-04	6.10E-04	6.10E-04	9.16E-04	9.16E-04	3.05E-04	3.05E-04	3.05E-04	3.05E-04	3.05E-04	3.05E-04	3.05E-04	3.05E-04	3.05E-04	0.00E+00	0.00E+00
Roller	4.36E-04	4.36E-04	4.36E-04	4.36E-04	4.36E-04	4.36E-04	4.36E-04	4.36E-04	6.54E-04	6.54E-04	6.54E-04	6.54E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.18E-04
Bore/Drill Rigs	0.00E+00	0.00E+00	0.00E+00	5.86E-04	5.86E-04	2.93E-04	2.93E-04	2.93E-04	2.93E-04	2.96E-04	2.96E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite Total (metric tons/month)	**3.10E-03**	**3.10E-03**	**3.10E-03**	**5.06E-03**	**4.73E-03**	**4.44E-03**	**3.83E-03**	**3.15E-03**	**3.02E-03**	**2.05E-03**	**1.88E-03**	**3.67E-03**	**2.57E-03**	**2.57E-03**	**2.57E-03**	**2.26E-03**	**2.18E-04**
Offsite Total (metric tons/day) [a]	**1.41E-04**	**1.41E-04**	**1.41E-04**	**2.30E-04**	**2.15E-04**	**2.02E-04**	**1.74E-04**	**1.43E-04**	**1.37E-04**	**9.33E-05**	**8.55E-05**	**1.67E-04**	**1.17E-04**	**1.17E-04**	**1.17E-04**	**1.03E-04**	**9.91E-06**
Offsite Project Total (metric tons)	**5.13E-02**																

Offsite Construction Equipment CH_4 Emissions from Lightspeed SJC02 Construction

Offsite Equipment	CH_4 Emissions (metric tons/month)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Water Truck	3.12E-04	3.12E-04	3.12E-04	3.12E-04	3.12E-04	3.12E-04	3.12E-04	3.12E-04	3.12E-04	3.12E-04	3.12E-04	3.12E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Excavator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-03	1.56E-03	1.56E-03	1.56E-03	1.56E-03	0.00E+00
Grader	8.68E-04	8.68E-04	8.68E-04	8.68E-04	4.34E-04	4.34E-04	4.34E-04	4.34E-04	4.34E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Backhoe	0.00E+00	0.00E+00	0.00E+00	9.47E-04	9.47E-04	9.47E-04	9.47E-04	4.73E-04	2.37E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Rubber Tired Loader	2.39E-04	2.39E-04	2.39E-04	2.39E-04	2.39E-04	2.39E-04	2.39E-04	2.39E-04	2.39E-04	2.39E-04	1.20E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Forklift	4.22E-04	4.22E-04	4.22E-04	4.22E-04	6.33E-04	6.33E-04	2.11E-04	2.11E-04	2.11E-04	2.11E-04	2.11E-04	2.11E-04	2.11E-04	2.11E-04	2.11E-04	0.00E+00	0.00E+00
Roller	3.01E-04	3.01E-04	3.01E-04	3.01E-04	3.01E-04	3.01E-04	3.01E-04	3.01E-04	4.52E-04	4.52E-04	4.52E-04	4.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-04
Bore/Drill Rigs	0.00E+00	0.00E+00	0.00E+00	4.05E-04	4.05E-04	2.03E-04	2.03E-04	2.03E-04	2.03E-04	2.04E-04	2.04E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite Total (metric tons/month)	**2.14E-03**	**2.14E-03**	**2.14E-03**	**3.49E-03**	**3.27E-03**	**3.07E-03**	**2.65E-03**	**2.17E-03**	**2.09E-03**	**1.42E-03**	**1.30E-03**	**2.54E-03**	**1.77E-03**	**1.77E-03**	**1.77E-03**	**1.56E-03**	**1.51E-04**
Offsite Total (metric tons/day) [a]	**9.74E-05**	**9.74E-05**	**9.74E-05**	**1.59E-04**	**1.49E-04**	**1.39E-04**	**1.20E-04**	**9.88E-05**	**9.49E-05**	**6.45E-05**	**5.91E-05**	**1.15E-04**	**8.06E-05**	**8.06E-05**	**8.06E-05**	**7.10E-05**	**6.85E-06**
Offsite Project Total (metric tons)	**3.55E-02**																

Notes:
[a] Per information provided by the Applicant's engineering contractor, the days per month are as follows: 22

Appendix 3.3-A, Table 9
Offsite Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Offsite Vehicle Exhaust CO Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.02
Offsite Dump Truck	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.16	0.15	0.03	0.03	0.03	0.01	0.01	0.01	0.00
Offsite Total (lb/day)	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.21**	**0.19**	**0.07**	**0.07**	**0.07**	**0.06**	**0.06**	**0.06**	**0.02**
Vehicle Type	**CO Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.40
Offsite Dump Truck	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	3.58	3.23	0.65	0.65	0.65	0.32	0.32	0.32	0.00
Offsite Total (lb/month)	**2.19**	**2.19**	**2.19**	**2.19**	**2.19**	**2.19**	**2.19**	**2.19**	**4.69**	**4.23**	**1.64**	**1.64**	**1.64**	**1.32**	**1.32**	**1.32**	**0.40**
Offsite Project Total (tons)	**0.02**																

Offsite Vehicle Exhaust VOC Emissions from Lightspeed SJC02 Construction

Vehicle Type	VOC Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	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	0.00
Offsite Dump Truck	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.06	0.04	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Offsite Total (lb/day)	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.06**	**0.05**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**
Vehicle Type	**VOC Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.03
Offsite Dump Truck	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	1.26	0.95	0.19	0.19	0.19	0.09	0.09	0.09	0.00
Offsite Total (lb/month)	**0.45**	**0.45**	**0.45**	**0.45**	**0.45**	**0.45**	**0.45**	**0.45**	**1.33**	**1.01**	**0.25**	**0.25**	**0.25**	**0.16**	**0.16**	**0.16**	**0.03**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Exhaust SO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	SO_X Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	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	0.00
Offsite Dump Truck	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	0.00
Offsite Total (lb/day)	**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**	**0.00**
Vehicle Type	**SO_X Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	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	0.00
Offsite Dump Truck	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Offsite Total (lb/month)	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.04**	**0.04**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Offsite Vehicle Exhaust NO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	NO_X Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	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	0.00
Offsite Dump Truck	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.68	0.65	0.13	0.13	0.13	0.06	0.06	0.06	0.00
Offsite Total (lb/day)	**0.21**	**0.21**	**0.21**	**0.21**	**0.21**	**0.21**	**0.21**	**0.21**	**0.68**	**0.65**	**0.13**	**0.13**	**0.13**	**0.07**	**0.07**	**0.07**	**0.00**
Vehicle Type	**NO_X Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.03
Offsite Dump Truck	4.48	4.48	4.48	4.48	4.48	4.48	4.48	4.48	14.92	14.25	2.85	2.85	2.85	1.43	1.43	1.43	0.00
Offsite Total (lb/month)	**4.57**	**4.57**	**4.57**	**4.57**	**4.57**	**4.57**	**4.57**	**4.57**	**15.02**	**14.33**	**2.93**	**2.93**	**2.93**	**1.51**	**1.51**	**1.51**	**0.03**
Offsite Project Total (tons)	**0.04**																

Offsite Vehicle Exhaust and Vehicle Wear PM_{10} Emissions from Lightspeed SJC02 Construction

Vehicle Type	PM_{10} Emissions (lb/day) [b]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	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	0.00
Offsite Dump Truck	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (lb/day)	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.02**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	**PM_{10} Emissions (lb/month) [a, b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.01
Offsite Dump Truck	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.44	0.32	0.06	0.06	0.06	0.03	0.03	0.03	0.00
Offsite Total (lb/month)	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.46**	**0.35**	**0.09**	**0.09**	**0.09**	**0.06**	**0.06**	**0.06**	**0.01**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Exhaust and Vehicle Wear $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Vehicle Type	$PM_{2.5}$ Emissions (lb/day) [b]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	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	0.00
Offsite Dump Truck	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (lb/day)	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	**$PM_{2.5}$ Emissions (lb/month) [a, b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Offsite Dump Truck	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.42	0.30	0.06	0.06	0.06	0.03	0.03	0.03	0.00
Offsite Total (lb/month)	**0.14**	**0.14**	**0.14**	**0.14**	**0.14**	**0.14**	**0.14**	**0.14**	**0.44**	**0.32**	**0.07**	**0.07**	**0.07**	**0.04**	**0.04**	**0.04**	**0.01**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Offsite Vehicle Exhaust CO_2 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO_2 Emissions (metric tons/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Pick-up Truck	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	0.00
Offsite Dump Truck	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Offsite Total (metric tons/day)	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.04**	**0.04**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**
Vehicle Type	CO_2 Emissions (metric tons/month) [a]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Pick-up Truck	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.03
Offsite Dump Truck	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.73	0.72	0.14	0.14	0.14	0.07	0.07	0.07	0.00
Offsite Total (metric tons/month)	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.81**	**0.79**	**0.22**	**0.22**	**0.22**	**0.15**	**0.15**	**0.15**	**0.03**
Offsite Project Total (metric tons)	**5.08**																

Offsite Vehicle Exhaust N_2O Emissions from Lightspeed SJC02 Construction

Vehicle Type	N_2O Emissions (metric tons/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Pick-up Truck	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	7.90E-08	3.16E-08
Offsite Dump Truck	2.88E-08	2.88E-08	2.88E-08	2.88E-08	2.88E-08	2.88E-08	2.88E-08	2.88E-08	9.60E-08	9.60E-08	1.92E-08	1.92E-08	1.92E-08	9.60E-09	9.60E-09	9.60E-09	0.00E+00
Offsite Total (metric tons/day)	**1.08E-07**	**1.08E-07**	**1.08E-07**	**1.08E-07**	**1.08E-07**	**1.08E-07**	**1.08E-07**	**1.08E-07**	**1.75E-07**	**1.75E-07**	**9.82E-08**	**9.82E-08**	**9.82E-08**	**8.86E-08**	**8.86E-08**	**8.86E-08**	**3.16E-08**
Vehicle Type	N_2O Emissions (metric tons/month) [a]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Pick-up Truck	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	1.74E-06	6.95E-07
Offsite Dump Truck	6.34E-07	6.34E-07	6.34E-07	6.34E-07	6.34E-07	6.34E-07	6.34E-07	6.34E-07	2.11E-06	2.11E-06	4.22E-07	4.22E-07	4.22E-07	2.11E-07	2.11E-07	2.11E-07	0.00E+00
Offsite Total (metric tons/month)	**2.37E-06**	**2.37E-06**	**2.37E-06**	**2.37E-06**	**2.37E-06**	**2.37E-06**	**2.37E-06**	**2.37E-06**	**3.85E-06**	**3.85E-06**	**2.16E-06**	**2.16E-06**	**2.16E-06**	**1.95E-06**	**1.95E-06**	**1.95E-06**	**6.95E-07**
Offsite Project Total (metric tons)	**3.97E-05**																

Offsite Vehicle Exhaust CH_4 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CH_4 Emissions (metric tons/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Pick-up Truck	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	6.40E-08	2.56E-08
Offsite Dump Truck	3.06E-08	3.06E-08	3.06E-08	3.06E-08	3.06E-08	3.06E-08	3.06E-08	3.06E-08	1.02E-07	1.02E-07	2.04E-08	2.04E-08	2.04E-08	1.02E-08	1.02E-08	1.02E-08	0.00E+00
Offsite Total (metric tons/day)	**2.70E-10**	**9.46E-08**	**9.46E-08**	**9.46E-08**	**9.46E-08**	**9.46E-08**	**9.46E-08**	**9.46E-08**	**1.66E-07**	**1.66E-07**	**8.44E-08**	**8.44E-08**	**8.44E-08**	**7.42E-08**	**7.42E-08**	**7.42E-08**	**2.56E-08**
Vehicle Type	CH_4 Emissions (metric tons/month) [a]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Pick-up Truck	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	1.41E-06	5.63E-07
Offsite Dump Truck	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	2.24E-06	2.24E-06	4.49E-07	4.49E-07	4.49E-07	2.24E-07	2.24E-07	2.24E-07	0.00E+00
Offsite Total (metric tons/month)	**2.08E-06**	**2.08E-06**	**2.08E-06**	**2.08E-06**	**2.08E-06**	**2.08E-06**	**2.08E-06**	**2.08E-06**	**3.65E-06**	**3.65E-06**	**1.86E-06**	**1.86E-06**	**1.86E-06**	**1.63E-06**	**1.63E-06**	**1.63E-06**	**5.63E-07**
Offsite Project Total (metric tons)	**3.50E-05**																

Notes:
[a] The days per month for construction in the data above was provided by the Applicant's engineering contractor.
[b] PM_{10} and $PM_{2.5}$ Emissions include emissions from exhaust and tire and brake wear.

Appendix 3.3-A, Table 10
Offsite Vehicle Idling Emissions
Lightspeed SJC02
November 2019

Offsite Vehicle Idling CO Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Offsite Total (lb/day)	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.06**	**0.06**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**
Vehicle Type	**CO Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	1.27	1.29	0.26	0.26	0.26	0.13	0.13	0.13	0.00
Offsite Total (lb/month)	**0.38**	**0.38**	**0.38**	**0.38**	**0.38**	**0.38**	**0.38**	**0.38**	**1.27**	**1.29**	**0.26**	**0.26**	**0.26**	**0.13**	**0.13**	**0.13**	**0.00**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Idling VOC Emissions from Lightspeed SJC02 Construction

Vehicle Type	VOC Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	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	0.00
Offsite Total (lb/day)	**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**	**0.00**
Vehicle Type	**VOC Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.10	0.10	0.02	0.02	0.02	0.01	0.01	0.01	0.00
Offsite Total (lb/month)	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.10**	**0.10**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.00**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Idling SO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	SO_X Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	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	0.00
Offsite Total (lb/day)	**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**	**0.00**
Vehicle Type	**SO_X Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	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	0.00
Offsite Total (lb/month)	**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**	**0.00**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Idling Emissions
Lightspeed SJC02
November 2019

Offsite Vehicle Idling NO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	NO_X Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Offsite Total (lb/day)	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.06**	**0.06**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**
Vehicle Type	**NO_X Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	1.41	1.36	0.27	0.27	0.27	0.14	0.14	0.14	0.00
Offsite Total (lb/month)	**0.42**	**0.42**	**0.42**	**0.42**	**0.42**	**0.42**	**0.42**	**0.42**	**1.41**	**1.36**	**0.27**	**0.27**	**0.27**	**0.14**	**0.14**	**0.14**	**0.00**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Idling PM_{10} Emissions from Lightspeed SJC02 Construction

Vehicle Type	PM_{10} Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	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	0.00
Offsite Total (lb/day)	**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**	**0.00**
Vehicle Type	**PM_{10} Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	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	0.00
Offsite Total (lb/month)	**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**	**0.00**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Idling $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Vehicle Type	$PM_{2.5}$ Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	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	0.00
Offsite Total (lb/day)	**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**	**0.00**
Vehicle Type	**$PM_{2.5}$ Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Offsite Dump Truck [a]	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	0.00
Offsite Total (lb/month)	**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**	**0.00**
Offsite Project Total (tons)	**0.00**																

Offsite Vehicle Idling Emissions
Lightspeed SJC02
November 2019

Offsite Vehicle Idling CO_2 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO_2 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Dump Truck [a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Total (metric tons/day)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Vehicle Type	**CO_2 Emissions (metric tons/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Dump Truck [a]	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.11	0.11	0.02	0.02	0.02	0.01	0.01	0.01	0.00
Offsite Total (metric tons/month)	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.11**	**0.11**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.00**
Offsite Project Total (metric tons)	**0.59**																

Offsite Vehicle Idling CH_4 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CH_4 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Dump Truck [a]	2.80E-08	2.80E-08	2.80E-08	2.80E-08	2.80E-08	2.80E-08	2.80E-08	2.80E-08	9.33E-08	9.27E-08	1.85E-08	1.85E-08	1.85E-08	9.27E-09	9.27E-09	9.27E-09	0.00E+00
Offsite Total (metric tons/day)	**2.80E-08**	**2.80E-08**	**2.80E-08**	**2.80E-08**	**2.80E-08**	**2.80E-08**	**2.80E-08**	**2.80E-08**	**9.33E-08**	**9.27E-08**	**1.85E-08**	**1.85E-08**	**1.85E-08**	**9.27E-09**	**9.27E-09**	**9.27E-09**	**0.00E+00**
Vehicle Type	**CH_4 Emissions (metric tons/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Dump Truck [a]	6.16E-07	6.16E-07	6.16E-07	6.16E-07	6.16E-07	6.16E-07	6.16E-07	6.16E-07	2.05E-06	2.04E-06	4.08E-07	4.08E-07	4.08E-07	2.04E-07	2.04E-07	2.04E-07	0.00E+00
Offsite Total (metric tons/month)	**6.16E-07**	**6.16E-07**	**6.16E-07**	**6.16E-07**	**6.16E-07**	**6.16E-07**	**6.16E-07**	**6.16E-07**	**2.05E-06**	**2.04E-06**	**4.08E-07**	**4.08E-07**	**4.08E-07**	**2.04E-07**	**2.04E-07**	**2.04E-07**	**0.00E+00**
Offsite Project Total (metric tons)	**1.09E-05**																

Notes:
[a] It is estimated that each Offsite dump truck idles for approximately 5 minutes each day, or: 0.083 idle-hrs/day.
[b] The days per month for construction in the data above was provided by the Applicant's engineering contractor, as presented in Appendix 3.3-A, Table 11.

Appendix 3.3-A, Table 11
Emissions from Fugitive Dust and Other Offroad Activities
Lightspeed SJC02
November 2019

Grading and Truck Dumping/Loading Activity Levels for Lightspeed SJC02 Construction

Source	Monthly Activity Levels																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Graded Area (acres) [a]	0	0	0	11	11	11	11	11	11	0	0	0	0	0	0	0	0
Soil Imported/Exported (cubic yards) [b]	19,333	19,333	19,333	19,333	19,333	19,333	19,333	19,333	19,333	19,333	19,333	19,333	19,333	19,333	19,333	0	0

Notes:

[a] Estimated the entire site to be graded due to the need for laydown/storage; assumed this disturbance was equally distributed amongst the months in which graders are utilized.

[b] Soil Imported/Exported provided by the Applicant's engineering contractor. Assumed the imports/exports and associated loading/dumping activity are equally distributed amongst the months in which front end loaders are utilized either onsite or offsite.

Demolition Activity Levels

Source	Monthly Activity Levels																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Debris Generated from Mechanical Dismemberment (tons) [a]	2,938.91	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

Notes:

[a] Debris generated from demolition of existing buildings was estimated based on information provided by the Applicant's engineering contractor. A building, barn, two houses, and a garage are anticipated to be demolished during the first month of the construction time frame. Only materials generated from demolition that may generate fugitive dust were included. The demolition quantities were determined as follows:

	Volume of Building Based on Dimensions		Estimated Building Waste Volume*		Estimated Weight of Demolition Debris*	
Rust Colored Building	84,150	cubic feet	21,038	cubic feet	389.19	tons
Barn	448,950	cubic feet	112,238	cubic feet	2076.39	tons
House 1	28,080	cubic feet	7,020	cubic feet	129.87	tons
House 2	62,500	cubic feet	15,625	cubic feet	289.06	tons
Garage	11,760	cubic feet	2,940	cubic feet	54.39	tons
Total	635,440	cubic feet	158,860	cubic feet	2,939	tons

* Estimated building waste volume and weight of demolition debris using the following conversion factors, as presented in Section 4.4 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017):

1 cubic foot of Building Volume =	0.25	cubic feet of Building Waste Volume
1 cubic yard of Building Waste Volume =	0.5	ton of Building Waste Weight

Onsite Vehicle Fugitive PM_{10} Emissions from Unpaved Roads During Lightspeed SJC02 Construction

Vehicle Type	Fugitive PM_{10} Emissions (lb/day) [a]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onsite Pick-up Truck	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	3.52
Onsite Dump Truck	87.89	87.89	87.89	87.89	10.55	7.03	7.03	7.03	7.03	7.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**94.92**	**94.92**	**94.92**	**94.92**	**17.58**	**14.06**	**14.06**	**14.06**	**14.06**	**14.06**	**7.03**	**7.03**	**7.03**	**7.03**	**7.03**	**7.03**	**3.52**
Vehicle Type	**Fugitive PM_{10} Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	154.69	77.35
Onsite Dump Truck	1,933.65	1,933.65	1,933.65	1,933.65	232.04	154.69	154.69	154.69	154.69	154.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**2,088.34**	**2,088.34**	**2,088.34**	**2,088.34**	**386.73**	**309.38**	**309.38**	**309.38**	**309.38**	**309.38**	**154.69**	**154.69**	**154.69**	**154.69**	**154.69**	**154.69**	**77.35**
Onsite Project Total (tons)	**5.65**																

Notes:

[a] Emissions based on the controlled unpaved road emission factor for PM_{10}.

Emissions from Fugitive Dust and Other Offroad Activities
Lightspeed SJC02
November 2019

Onsite Vehicle Fugitive $PM_{2.5}$ Emissions from Unpaved Roads During Lightspeed SJC02 Construction

Vehicle Type	Fugitive $PM_{2.5}$ Emissions (lb/day) [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.35
Onsite Dump Truck	8.79	8.79	8.79	8.79	1.05	0.70	0.70	0.70	0.70	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/day)	**9.49**	**9.49**	**9.49**	**9.49**	**1.76**	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**0.70**	**0.70**	**0.70**	**0.70**	**0.70**	**0.70**	**0.35**
Vehicle Type	**Fugitive $PM_{2.5}$ Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onsite Pick-up Truck	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	15.47	7.73
Onsite Dump Truck	193.36	193.36	193.36	193.36	23.20	15.47	15.47	15.47	15.47	15.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total (lb/month)	**208.83**	**208.83**	**208.83**	**208.83**	**38.67**	**30.94**	**30.94**	**30.94**	**30.94**	**30.94**	**15.47**	**15.47**	**15.47**	**15.47**	**15.47**	**15.47**	**7.73**
Onsite Project Total (tons)	**0.56**																

Notes:
[a] Emissions based on the controlled unpaved road emission factor for $PM_{2.5}$.

Offsite Vehicle Fugitive PM_{10} Emissions from Unpaved Roads During Lightspeed SJC02 Construction

Vehicle Type	Fugitive PM_{10} Emissions (lb/day) [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	3.52
Offsite Dump Truck	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	17.58	17.58	3.52	3.52	3.52	1.76	1.76	1.76	0.00
Onsite Total (lb/day)	**14.06**	**14.06**	**14.06**	**14.06**	**14.06**	**14.06**	**14.06**	**14.06**	**26.37**	**26.37**	**12.31**	**12.31**	**12.31**	**10.55**	**10.55**	**10.55**	**3.52**
Vehicle Type	**Fugitive PM_{10} Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	193.36	77.35
Offsite Dump Truck	116.02	116.02	116.02	116.02	116.02	116.02	116.02	116.02	386.73	386.73	77.35	77.35	77.35	38.67	38.67	38.67	0.00
Onsite Total (lb/month)	**309.38**	**309.38**	**309.38**	**309.38**	**309.38**	**309.38**	**309.38**	**309.38**	**580.09**	**580.09**	**270.71**	**270.71**	**270.71**	**232.04**	**232.04**	**232.04**	**77.35**
Onsite Project Total (tons)	**2.61**																

Notes:
[a] Emissions based on the controlled unpaved road emission factor for PM_{10}.

Offsite Vehicle Fugitive $PM_{2.5}$ Emissions from Unpaved Roads During Lightspeed SJC02 Construction

Vehicle Type	Fugitive $PM_{2.5}$ Emissions (lb/day) [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.35
Offsite Dump Truck	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	1.76	1.76	0.35	0.35	0.35	0.18	0.18	0.18	0.00
Onsite Total (lb/day)	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**2.64**	**2.64**	**1.23**	**1.23**	**1.23**	**1.05**	**1.05**	**1.05**	**0.35**
Vehicle Type	**Fugitive $PM_{2.5}$ Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Offsite Pick-up Truck	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34	7.73
Offsite Dump Truck	11.60	11.60	11.60	11.60	11.60	11.60	11.60	11.60	38.67	38.67	7.73	7.73	7.73	3.87	3.87	3.87	0.00
Onsite Total (lb/month)	**30.94**	**30.94**	**30.94**	**30.94**	**30.94**	**30.94**	**30.94**	**30.94**	**58.01**	**58.01**	**27.07**	**27.07**	**27.07**	**23.20**	**23.20**	**23.20**	**7.73**
Onsite Project Total (tons)	**0.26**																

Notes:
[a] Emissions based on the controlled unpaved road emission factor for $PM_{2.5}$.

Emissions from Fugitive Dust and Other Offroad Activities
Lightspeed SJC02
November 2019

Grading and Truck Dumping/Loading Fugitive PM_{10} Emissions from Lightspeed SJC02 Construction

Construction Activity	Fugitive PM_{10} Emissions (lb/day) [a, b]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Grading [c]	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck Dumping/Loading [d, e]	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.00
Total (lb/day)	**0.04**	**0.04**	**0.04**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.00**	**0.00**
Construction Activity	**Fugitive PM_{10} Emissions (lb/month) [a, b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Grading	0.00	0.00	0.00	5.40	5.40	5.40	5.40	5.40	5.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck Dumping/Loading	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.00	0.00
Total (lb/month)	**0.98**	**0.98**	**0.98**	**6.38**	**6.38**	**6.38**	**6.38**	**6.38**	**6.38**	**0.98**	**0.98**	**0.98**	**0.98**	**0.98**	**0.98**	**0.00**	**0.00**
Project Total (tons)	**0.02**																

Notes:
[a] Work days per month are as follows, provided by the Applicant's engineering contractor: 22
[b] Emissions based on the controlled emission factor for PM_{10}.
[c] Per Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017), the following blade width was assumed for grading equipment: 12 ft
[d] Assume that soil is dumped from or loaded to the truck the same month it is imported or exported, respectively.
[e] Per Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017), the following conversion factor was used: 1.26 tons/cubic yard

Grading and Truck Dumping/Loading Fugitive $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Construction Activity	Fugitive $PM_{2.5}$ Emissions (lb/day) [a, b]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Grading [c]	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck Dumping/Loading [d, e]	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Onsite Total (lb/day)	**0.01**	**0.01**	**0.01**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**
Construction Activity	**Fugitive $PM_{2.5}$ Emissions (lb/month) [a, b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Grading	0.00	0.00	0.00	0.58	0.58	0.58	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck Dumping/Loading	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.00
Onsite Total (lb/month)	**0.15**	**0.15**	**0.15**	**0.73**	**0.73**	**0.73**	**0.73**	**0.73**	**0.73**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.00**	**0.00**
Onsite Project Total (tons)	**0.00**																

Notes:
[a] Work days per month are as follows, provided by the Applicant's engineering contractor: 22
[b] Emissions based on the controlled emission factor for $PM_{2.5}$.
[c] Per Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017), the following blade width was assumed for grading equipment: 12 ft
[d] Assume that soil is dumped from or loaded to the truck the same month it is imported or exported, respectively.
[e] Per Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017), the following conversion factor was used: 1.26 tons/cubic yard

Emissions from Fugitive Dust and Other Offroad Activities
Lightspeed SJC02
November 2019

Onsite Demolition Fugitive PM_{10} Emissions from Lightspeed SJC02 Construction

Demolition Activity	Fugitive PM_{10} Emissions (lbs/day) [a, b]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Dismemberment	0.07	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
Debris Loading [c]	1.22	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
Onsite Total (lbs/day)	**1.29**	**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**
Demolition Activity	**Fugitive PM_{10} Emissions (lbs/month) [a, b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Dismemberment	1.45	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
Debris Loading [c]	26.85	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
Onsite Total (lbs/month)	**28.30**	**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**
Onsite Project Total (tons)	**0.01**																

Notes:
[a] Work days per month are as follows, provided by the Applicant's engineering contractor: 22
[b] Emissions based on the controlled emission factor for PM_{10}.
[c] Assume that all debris generated per month from dismemberment is loaded in the same month that it is generated.

Onsite Demolition Fugitive $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Demolition Activity	Fugitive $PM_{2.5}$ Emissions (lbs/day) [a, b]																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Dismemberment	0.01	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
Debris Loading [c]	0.18	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
Onsite Total (lbs/day)	**0.19**	**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**
Demolition Activity	**Fugitive $PM_{2.5}$ Emissions (lbs/month) [a, b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Dismemberment	0.22	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
Debris Loading [c]	4.07	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
Onsite Total (lbs/month)	**4.29**	**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**
Onsite Project Total (tons)	**0.00**																

Notes:
[a] Work days per month are as follows, provided by the Applicant's engineering contractor: 22
[b] Emissions based on the controlled emission factor for $PM_{2.5}$.
[c] Assume that all debris generated per month from dismemberment is loaded in the same month that it is generated.

Construction Vehicle Activity for Lightspeed SJC02 Construction

Vehicle Type	Onsite Miles/Day [a]	Offsite Miles/Day [a]	Working Days per Month [b]
Pick-up Truck	4	2	22
Dump Truck	4	2	22

Notes:
[a] Estimated based on the dimensions of the project site and anticipated activity onsite and offsite.

Emissions from Fugitive Dust and Other Offroad Activities
Lightspeed SJC02
November 2019

Fugitive Dust Emission Factors for Unpaved Roads
Vehicles on Unpaved Surfaces at Industrial Sites

Parameter	PM_{10}	$PM_{2.5}$
Mean Vehicle Weight [a]	16.5	16.5
Silt Content [b]	8.5	8.5
k [c]	1.5	0.15
a [c]	0.9	0.9
b [c]	0.45	0.45
P [d]	64	64
Emission Factor (Uncontrolled, lb/mile) [e]	1.95	0.20
Reduction from Watering Twice Daily [f]	55%	55%
Emission Factor (Controlled, lb/mile)	0.88	0.09

Notes:
[a] Mean vehicle weight assumes that medium/heavy duty trucks weigh 16.5 tons.
[b] Silt content taken from Table 13.2.2-1 of Section 13.2.2 of *AP-42* (EPA, 2006) for a Construction Site, Scraper Route; this value is consistent with the CalEEMod default for the San Francisco Bay Area Air Basin.
[c] k, a, and b taken from Table 13.2.2-2 of Section 13.2.2 of *AP-42* (EPA, 2006) for industrial roads.
[d] P taken as the CalEEMod default for the Santa Clara climate region of the San Francisco Bay Area Air Basin.
[e] Emission factor calculated using Equations 1a and 2 from Section 13.2.2 of *AP-42* (EPA, 2006):
Emission Factor (lb/mile) = $\{k \text{ (lb/mile)} \times [\text{Silt Content (\%)} / 12]^a \times [\text{Mean Vehicle Weight (tons)} / 3]^b\} \times [(365 - P) / 365]$
[f] Control efficiency taken from Table XI-D of the *SCAQMD CEQA Handbook* for Travel Over Unpaved Roads (SCAQMD, 2007), based on the basic construction mitigation measures recommended by BAAQMD (BAAQMD, 2017).

Fugitive Dust Emission Factors for Truck Dumping/Loading
Truck Dumping on a Pile or Loading to a Truck from a Pile

Parameter	PM_{10}	$PM_{2.5}$
k [a]	0.35	0.053
U [b]	4.9	4.9
M [a]	12.0	12.0
Emission Factor (lb/ton) [c]	0.0001	0.00001
Reduction from Watering Twice Daily [d]	55%	55%
Emission Factor (Controlled, lb/ton)	0.00004	0.000006

Notes:
[a] k and M taken from Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
[b] U taken as the CalEEMod default for the Santa Clara climate region of the San Francisco Bay Area Air Basin. Value converted from units of m/s to mph.
[c] Emission factor calculated using the following equation from Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017):
Emission Factor (lb/ton) = $k \times 0.0032 \times [U \text{ (mph)} / 5]^{1.3} / [M \text{ (\%)} / 2]^{1.4}$
[d] Control efficiency based on watering twice daily, for consistency with the treatment of unpaved roads.

Fugitive Dust Emission Factors for Grading
Grading Equipment Passes

Parameter	PM_{10}	$PM_{2.5}$
S [a]	7.1	7.1
F [a]	0.6	0.031
Emission Factor (lb/VMT) [b]	1.543	0.167
Reduction from Watering Twice Daily [c]	55%	55%
Emission Factor (Controlled, lb/VMT)	0.694	0.075

Notes:
[a] S and F taken from Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
[b] Emission factor calculated using the following equation from Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017):
PM_{10} Emission Factor (lb/VMT) = $0.051 \times [S \text{ (mph)}]^{2.0} \times F_{PM10}$
$PM_{2.5}$ Emission Factor (lb/VMT) = $0.04 \times [S \text{ (mph)}]^{2.5} \times F_{PM2.5}$
[c] Control efficiency based on watering twice daily, for consistency with the treatment of unpaved roads.

Fugitive Dust Emission Factors for Dismemberment
Dismemberment and Collapse of Structures

Parameter	PM_{10}	$PM_{2.5}$
k [a]	0.35	0.053
U (mph) [b]	4.9	4.9
M (%) [c]	2.0	2.0
Emission Factor (lbs/ton) [d]	0.00110	0.00017
Reduction from Watering Twice Daily [e]	55%	55%
Emission Factor (Controlled, lbs/ton)	0.00049	0.00007

Notes:
[a] k, the particle size multiplier, taken from Section 13.2.4.3 of *AP-42* (EPA, 2006) per Section 4.4 of Appendix A of the *CalEEMod User's Guide (* BREEZE, 2017).
[b] U, the mean wind speed, taken as the CalEEMod default for the Long Beach climate region of the South Coast Air Basin. Converted from meters/second (m/s) to miles per hour (mph).
[c] M, the material moisture content, taken from Section 4.4 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
[d] Emission factor calculated using the following equation from Section 13.2.4.3 of *AP-42* (EPA, 2006) per Section 4.4 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017):
Emission Factor (lbs/ton) = $k \times 0.0032 \times [U / 5]^{1.3} / [M / 2]^{1.4}$
[e] Control efficiency based on watering twice daily, for consistency with the treatment of unpaved roads.

Fugitive Dust Emission Factors for Debris Loading
Loading of Debris/Building Waste

Parameter	PM_{10}	$PM_{2.5}$
k [a]	0.35	0.053
EF_{L-TSP} [b]	0.058	0.058
Emission Factor (lbs/ton) [c]	0.020	0.003
Reduction from Watering Twice Daily [d]	55%	55%
Emission Factor (Controlled, lbs/ton)	0.009	0.001

Notes:
[a] k taken from Section 13.2.4.3 of *AP-42* (EPA, 2006) per Section 4.4 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
[b] EF_{L-TSP} taken from Section 4.4 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
[c] Emission factor calculated using the following equation from Section 4.4 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017):
Emission Factor (lbs/ton) = $k \times EF_{L-TSP}$ (lbs/ton)
[d] Control efficiency based on watering twice daily, for consistency with the treatment of unpaved roads.

Appendix 3.3-A, Table 12
Onsite Paving Emissions
Lightspeed SJC02
November 2019

Paving VOC Emissions from Lightspeed SJC02 Construction

Paving Area	VOC Emissions (lb/day) [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Paved Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Onsite Total (lb/day)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.24**	**0.24**	**0.24**	**0.24**	**0.24**	**0.24**
Paving Area	**VOC Emissions (lb/month) [a]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Paved Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	5.36	5.36	5.36	5.36	5.36
Onsite Total (lb/month)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.36**	**5.36**	**5.36**	**5.36**	**5.36**	**5.36**
Onsite Project Total (tons)	**0.02**																

Notes:

[a] Assumed paving activities occur during only the last six months of construction.

Paving Emission Variables

Parameter	Value
Total Paved Area (acres) [a]	12.3
Working Days per Month [b]	22
Emission Factor (lb/acre) [c]	2.6

Notes:

[a] Total paved area estimated to include parking spaces, outdoor equipment areas, and the substation, for a total area of 535,000 square feet.

[b] Working days per month were provided by the Applicant's engineering contractor.

[c] Emission factor is per Section 4.8 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).

Appendix 3.3-A, Table 13
Onroad Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Onroad Vehicle Usage During Lightspeed SJC02 Construction

Vehicle Type	Number per Day																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks [a, d]	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	120	120
Onroad Material Hauling Trucks [b, d]	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0	0
Construction Worker Commute [c]	56	56	58	62	120	129	135	138	154	194	261	275	280	283	223	166	57

Notes:
[a] Onroad Delivery Trucks include information provided by the Applicant's engineering contractor, and exclude material haul trucks separately reported. Concrete truck trips are assumed to be included in this estimate.
[b] Material Hauling Trucks include data from the Applicant's engineering contractor. A net volume of 15 cubic yards per tandum dump truck results in 7,333 total trips for soil imports/exports. Truck trips limited to the months in which soil imports/exports are expected to be handled onsite, as presented in Appendix 3.3-A, Table 11.
[c] Assumed 1 commute per 1 worker; number of workers traveling to both onsite and offsite locations provided by the Applicant's engineering contractor as Total Staffing each month.
[d] Assumed deliveries and material hauling would occur 22 days per month based on information from the Applicant's engineering contractor.

Onroad Vehicle Exhaust CO Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.25	1.25	1.25	1.25	1.25	1.25	1.54	1.54
Material Hauling Trucks	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.77	0.77	0.77	0.77	0.77	0.77	0.00	0.00
Construction Worker Commute	2.57	2.57	2.66	2.85	5.51	5.92	6.20	6.33	7.07	8.02	10.79	11.37	11.58	11.70	9.22	6.86	2.36
Onroad Total (lb/day)	**5.02**	**5.02**	**5.11**	**5.29**	**7.95**	**8.37**	**8.64**	**8.78**	**9.52**	**10.04**	**12.81**	**13.39**	**13.59**	**13.72**	**11.24**	**8.40**	**3.89**
Vehicle Type	**CO Emissions (lb/month)**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	27.54	27.54	27.54	27.54	27.54	27.54	33.80	33.80
Material Hauling Trucks	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	16.85	16.85	16.85	16.85	16.85	16.85	0.00	0.00
Construction Worker Commute	56.54	56.54	58.56	62.60	121.16	130.25	136.30	139.33	155.49	176.44	237.38	250.11	254.66	257.39	202.82	150.98	51.84
Onroad Total (lb/month)	**110.39**	**110.39**	**112.41**	**116.44**	**175.01**	**184.09**	**190.15**	**193.18**	**209.33**	**220.82**	**281.76**	**294.49**	**299.04**	**301.77**	**247.20**	**184.77**	**85.64**
Onroad Project Total (tons)	**1.66**																

Onroad Vehicle Exhaust VOC Emissions from Lightspeed SJC02 Construction

Vehicle Type	VOC Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.31	0.31	0.31	0.31	0.31	0.31	0.38	0.38
Material Hauling Trucks	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.18	0.18	0.18	0.18	0.18	0.18	0.00	0.00
Construction Worker Commute	0.04	0.04	0.04	0.05	0.09	0.10	0.10	0.10	0.12	0.12	0.17	0.18	0.18	0.18	0.14	0.11	0.04
Onroad Total (lb/day)	**0.65**	**0.65**	**0.65**	**0.65**	**0.69**	**0.70**	**0.71**	**0.71**	**0.72**	**0.61**	**0.65**	**0.66**	**0.66**	**0.67**	**0.63**	**0.49**	**0.42**
Vehicle Type	**VOC Emissions (lb/month)**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks	8.47	8.47	8.47	8.47	8.47	8.47	8.47	8.47	8.47	6.82	6.82	6.82	6.82	6.82	6.82	8.38	8.38
Material Hauling Trucks	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	3.87	3.87	3.87	3.87	3.87	3.87	0.00	0.00
Construction Worker Commute	0.92	0.92	0.95	1.02	1.97	2.12	2.22	2.27	2.53	2.72	3.67	3.86	3.93	3.97	3.13	2.33	0.80
Onroad Total (lb/month)	**14.22**	**14.22**	**14.25**	**14.32**	**15.27**	**15.42**	**15.52**	**15.57**	**15.83**	**13.42**	**14.36**	**14.55**	**14.63**	**14.67**	**13.82**	**10.71**	**9.18**
Onroad Project Total (tons)	**0.12**																

Onroad Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Onroad Vehicle Exhaust SO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	SO_X Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04
Material Hauling Trucks	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00
Construction Worker Commute	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.02	0.01
Onroad Total (lb/day)	**0.07**	**0.07**	**0.07**	**0.07**	**0.08**	**0.08**	**0.08**	**0.08**	**0.08**	**0.08**	**0.09**	**0.09**	**0.09**	**0.09**	**0.09**	**0.06**	**0.05**
Vehicle Type	SO_X Emissions (lb/month)																
	1.00	**2.00**	**3.00**	**4.00**	**5.00**	**6.00**	**7.00**	**8.00**	**9.00**	**10.00**	**11.00**	**12.00**	**13.00**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.73	0.73	0.73	0.73	0.73	0.73	0.90	0.90
Material Hauling Trucks	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.55	0.55	0.55	0.55	0.55	0.55	0.00	0.00
Construction Worker Commute	0.16	0.16	0.16	0.17	0.34	0.36	0.38	0.39	0.43	0.53	0.72	0.75	0.77	0.78	0.61	0.46	0.16
Onroad Total (lb/month)	**1.47**	**1.47**	**1.48**	**1.49**	**1.65**	**1.68**	**1.70**	**1.70**	**1.75**	**1.81**	**2.00**	**2.03**	**2.05**	**2.06**	**1.89**	**1.36**	**1.06**
Onroad Project Total (tons)	**0.01**																

Onroad Vehicle Exhaust NO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	NO_X Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47	8.96	8.96	8.96	8.96	8.96	8.96	10.99	10.99
Material Hauling Trucks	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	6.42	6.42	6.42	6.42	6.42	6.42	0.00	0.00
Construction Worker Commute	0.19	0.19	0.20	0.21	0.42	0.45	0.47	0.48	0.53	0.58	0.78	0.82	0.84	0.84	0.67	0.50	0.17
Onroad Total (lb/day)	**18.01**	**18.01**	**18.01**	**18.03**	**18.23**	**18.26**	**18.28**	**18.29**	**18.35**	**15.96**	**16.16**	**16.20**	**16.22**	**16.23**	**16.05**	**11.49**	**11.16**
Vehicle Type	NO_X Emissions (lb/month)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	230.37	230.37	230.37	230.37	230.37	230.37	230.37	230.37	230.37	197.08	197.08	197.08	197.08	197.08	197.08	241.87	241.87
Material Hauling Trucks	161.49	161.49	161.49	161.49	161.49	161.49	161.49	161.49	161.49	141.34	141.34	141.34	141.34	141.34	141.34	0.00	0.00
Construction Worker Commute	4.27	4.27	4.42	4.73	9.15	9.83	10.29	10.52	11.74	12.74	17.14	18.06	18.39	18.58	14.64	10.90	3.74
Onroad Total (lb/month)	**396.12**	**396.12**	**396.27**	**396.58**	**401.00**	**401.69**	**402.14**	**402.37**	**403.59**	**351.16**	**355.56**	**356.48**	**356.80**	**357.00**	**353.06**	**252.77**	**245.61**
Onroad Project Total (tons)	**3.11**																

Onroad Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Onroad Vehicle Exhaust, Vehicle Wear, and Fugitive Dust PM_{10} Emissions from Lightspeed SJC02 Construction

Vehicle Type	PM_{10} Emissions (lb/day) [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.48	1.48	1.48	1.48	1.48	1.48	1.81	1.81
Material Hauling Trucks	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.85	0.85	0.85	0.85	0.85	0.85	0.00	0.00
Construction Worker Commute	0.92	0.92	0.96	1.02	1.98	2.13	2.23	2.28	2.54	3.20	4.31	4.54	4.62	4.67	3.68	2.74	0.94
Onroad Total (lb/day)	**3.31**	**3.31**	**3.34**	**3.41**	**4.37**	**4.51**	**4.61**	**4.66**	**4.93**	**5.54**	**6.64**	**6.87**	**6.95**	**7.00**	**6.01**	**4.55**	**2.76**
Vehicle Type	PM_{10} Emissions (lb/month) [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	33.29	32.53	32.53	32.53	32.53	32.53	32.53	39.93	39.93
Material Hauling Trucks	19.17	19.17	19.17	19.17	19.17	19.17	19.17	19.17	19.17	18.80	18.80	18.80	18.80	18.80	18.80	0.00	0.00
Construction Worker Commute	20.34	20.34	21.07	22.52	43.58	46.85	49.03	50.12	55.93	70.44	94.77	99.85	101.66	102.75	80.97	60.27	20.70
Onroad Total (lb/month)	**72.80**	**72.80**	**73.52**	**74.98**	**96.04**	**99.31**	**101.49**	**102.58**	**108.39**	**121.77**	**146.10**	**151.18**	**153.00**	**154.09**	**132.30**	**100.20**	**60.62**
Onroad Project Total (tons)	**0.91**																

Notes:

[a] PM_{10} Emissions include emissions from exhaust, paved roads, and tire and brake wear.

Onroad Vehicle Exhaust, Vehicle Wear, and Fugitive Dust $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Vehicle Type	$PM_{2.5}$ Emissions (lb/day) [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.53	0.53	0.53	0.53	0.53	0.53	0.65	0.65
Material Hauling Trucks	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.29	0.00	0.00
Construction Worker Commute	0.25	0.25	0.26	0.28	0.54	0.58	0.61	0.62	0.69	0.87	1.17	1.23	1.26	1.27	1.00	0.74	0.26
Onroad Total (lb/day)	**1.12**	**1.12**	**1.13**	**1.15**	**1.41**	**1.45**	**1.48**	**1.49**	**1.56**	**1.69**	**1.99**	**2.05**	**2.08**				**0.91**
Vehicle Type	$PM_{2.5}$ Emissions (lb/month) [a]																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	12.46	12.46	12.46	12.46	12.46	12.46	12.46	12.46	12.46	11.74	11.74	11.74	11.74	11.74	11.74	14.40	14.40
Material Hauling Trucks	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.33	6.33	6.33	6.33	6.33	6.33	0.00	0.00
Construction Worker Commute	5.53	5.53	5.72	6.12	11.84	12.73	13.32	13.62	15.20	19.13	25.74	27.12	27.61	27.91	21.99	16.37	5.62
Onroad Total (lb/month)	**24.67**	**24.67**	**24.87**	**25.26**	**30.98**	**31.87**	**32.47**	**32.76**	**34.34**	**37.20**	**43.81**	**45.19**	**45.68**	**45.98**	**40.06**	**30.77**	**20.02**
Onroad Project Total (tons)	**0.29**																

Notes:

[a] $PM_{2.5}$ Emissions include emissions from exhaust, paved roads, and tire and brake wear.

Onroad Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Onroad Vehicle Exhaust CO_2 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO_2 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.88	1.88	1.88	1.88	1.88	1.88	2.30	2.30
Material Hauling Trucks	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.45	1.45	1.45	1.45	1.45	1.45	0.00	0.00
Construction Worker Commute	0.38	0.38	0.39	0.42	0.82	0.88	0.92	0.94	1.05	1.28	1.73	1.82	1.85	1.87	1.48	1.10	0.38
Onroad Total (metric tons/day)	**3.76**	**3.76**	**3.78**	**3.81**	**4.20**	**4.26**	**4.30**	**4.32**	**4.43**	**4.61**	**5.05**	**5.14**	**5.18**				**2.68**
Vehicle Type	**CO_2 Emissions (metric tons/month)**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	42.04	42.04	42.04	42.04	42.04	42.04	42.04	42.04	42.04	41.27	41.27	41.27	41.27	41.27	41.27	50.65	50.65
Material Hauling Trucks	32.41	32.41	32.41	32.41	32.41	32.41	32.41	32.41	32.41	31.85	31.85	31.85	31.85	31.85	31.85	0.00	0.00
Construction Worker Commute	8.38	8.38	8.68	9.28	17.96	19.31	20.20	20.65	23.05	28.26	38.02	40.06	40.79	41.23	32.49	24.18	8.30
Onroad Total (metric tons/month)	**82.83**	**82.83**	**83.13**	**83.72**	**92.40**	**93.75**	**94.65**	**95.10**	**97.49**	**101.38**	**111.14**	**113.18**	**113.91**	**114.35**	**105.61**	**74.84**	**58.96**
Onroad Project Total (metric tons)	**1,599.28**																

Onroad Vehicle Exhaust N_2O Emissions from Lightspeed SJC02 Construction

Vehicle Type	N_2O Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	6.85E-06	8.41E-06	8.41E-06
Material Hauling Trucks	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	4.27E-06	0.00E+00	0.00E+00
Construction Worker Commute	2.21E-05	2.21E-05	2.29E-05	2.45E-05	4.74E-05	5.10E-05	5.34E-05	5.45E-05	6.09E-05	7.67E-05	1.03E-04	1.09E-04	1.11E-04	1.12E-04	8.81E-05	6.56E-05	2.25E-05
Onroad Total (metric tons/day)	**3.33E-05**	**3.33E-05**	**3.40E-05**	**3.56E-05**	**5.86E-05**	**6.21E-05**	**6.45E-05**	**6.57E-05**	**7.20E-05**	**8.78E-05**	**1.14E-04**	**1.20E-04**	**1.22E-04**	**1.23E-04**	**9.93E-05**	**7.40E-05**	**3.09E-05**
Vehicle Type	**N_2O Emissions (metric tons/month)**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.85E-04	1.85E-04
Material Hauling Trucks	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	9.39E-05	0.00E+00	0.00E+00
Construction Worker Commute	4.87E-04	4.87E-04	5.04E-04	5.39E-04	1.04E-03	1.12E-03	1.17E-03	1.20E-03	1.34E-03	1.69E-03	2.27E-03	2.39E-03	2.43E-03	2.46E-03	1.94E-03	1.44E-03	4.96E-04
Onroad Total (metric tons/month)	**7.32E-04**	**7.32E-04**	**7.49E-04**	**7.84E-04**	**1.29E-03**	**1.37E-03**	**1.42E-03**	**1.44E-03**	**1.58E-03**	**1.93E-03**	**2.51E-03**	**2.64E-03**	**2.68E-03**	**2.71E-03**	**2.18E-03**	**1.63E-03**	**6.81E-04**
Onroad Project Total (metric tons)	**2.71E-02**																

Onroad Vehicle Exhaust Emissions
Lightspeed SJC02
November 2019

Onroad Vehicle Exhaust CH_4 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CH_4 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	7.28E-06	8.94E-06	8.94E-06
Material Hauling Trucks	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	0.00E+00	0.00E+00
Construction Worker Commute	7.74E-06	7.74E-06	8.02E-06	8.57E-06	1.66E-05	1.78E-05	1.87E-05	1.91E-05	2.13E-05	2.68E-05	3.61E-05	3.80E-05	3.87E-05	3.91E-05	3.08E-05	2.29E-05	7.88E-06
Onroad Total (metric tons/day)	**1.96E-05**	**1.96E-05**	**1.98E-05**	**2.04E-05**	**2.84E-05**	**2.96E-05**	**3.05E-05**	**3.09E-05**	**3.31E-05**	**3.86E-05**	**4.79E-05**	**4.98E-05**	**5.05E-05**	**5.09E-05**	**4.26E-05**	**3.19E-05**	**1.68E-05**
Vehicle Type	**CH_4 Emissions (metric tons/month)**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.60E-04	1.97E-04	1.97E-04
Material Hauling Trucks	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	9.97E-05	0.00E+00	0.00E+00
Construction Worker Commute	1.70E-04	1.70E-04	1.76E-04	1.89E-04	3.65E-04	3.92E-04	4.11E-04	4.20E-04	4.68E-04	5.90E-04	7.94E-04	8.36E-04	8.52E-04	8.61E-04	6.78E-04	5.05E-04	1.73E-04
Onroad Total (metric tons/month)	**4.30E-04**	**4.30E-04**	**4.36E-04**	**4.48E-04**	**6.25E-04**	**6.52E-04**	**6.70E-04**	**6.80E-04**	**7.28E-04**	**8.50E-04**	**1.05E-03**	**1.10E-03**	**1.11E-03**	**1.12E-03**	**9.38E-04**	**7.01E-04**	**3.70E-04**
Onroad Project Total (metric tons)	**1.23E-02**																

Onroad Construction Vehicle Activity for Lightspeed SJC02 Construction

Vehicle Type	Roundtrip Miles/Day	Working Days per Month [a]
Onroad Delivery Trucks [b]	14.6	22
Material Hauling Trucks [c]	40.0	22
Construction Worker Commute [b]	21.6	22

Notes:

[a] The working days per month was provided by the Applicant's engineering contractor.

[b] Roundtrip miles/day for Onroad Delivery Trucks and Construction Worker Commute taken as the Urban, San Francisco Bay Area Air Basin C-NW and H-W values, respectively, from Table 4.2 of Appendix D of the CalEEMod User's Guide (BREEZE, 2017).

[c] Roundtrip miles/day for Material Hauling Trucks taken as the default from Section 4.5 of Appendix A of the CalEEMod User's Guide (BREEZE, 2017).

Appendix 3.3-A, Table 14
Onroad Vehicle Idling Emissions
Lightspeed SJC02
November 2019

Onroad Vehicle Idling CO Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks [a]	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.46	0.46	0.46	0.46	0.46	0.46	0.56	0.56
Material Hauling Trucks [a]	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.00	0.00
Onroad Total (lb/day)	**0.58**	**0.58**	**0.58**	**0.58**	**0.58**	**0.58**	**0.58**	**0.58**	**0.58**	**0.59**	**0.59**	**0.59**	**0.59**	**0.59**	**0.59**	**0.56**	**0.56**
Vehicle Type	**CO Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks [a]	9.90	9.90	9.90	9.90	9.90	9.90	9.90	9.90	9.90	10.03	10.03	10.03	10.03	10.03	10.03	12.31	12.31
Material Hauling Trucks [a]	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.86	2.86	2.86	2.86	2.86	2.86	0.00	0.00
Onroad Total (lb/month)	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.90**	**12.90**	**12.90**	**12.90**	**12.90**	**12.90**	**12.31**	**12.31**
Onroad Project Total (tons)	**0.11**																

Onroad Vehicle Idling VOC Emissions from Lightspeed SJC02 Construction

Vehicle Type	VOC Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks [a]	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04
Material Hauling Trucks [a]	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Onroad Total (lb/day)	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**
Vehicle Type	**VOC Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks [a]	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.65	0.65	0.65	0.65	0.65	0.65	0.80	0.80
Material Hauling Trucks [a]	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.00	0.00
Onroad Total (lb/month)	**0.89**	**0.89**	**0.89**	**0.89**	**0.89**	**0.89**	**0.89**	**0.89**	**0.89**	**0.87**	**0.87**	**0.87**	**0.87**	**0.87**	**0.87**	**0.80**	**0.80**
Onroad Project Total (tons)	**0.01**																

Onroad Vehicle Idling SO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	SO_X Emissions (lb/day)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks [a]	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	0.00
Material Hauling Trucks [a]	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	0.00
Onroad Total (lb/day)	**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**	**0.00**
Vehicle Type	**SO_X Emissions (lb/month) [b]**																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Onroad Delivery Trucks [a]	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03
Material Hauling Trucks [a]	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Onroad Total (lb/month)	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**
Onroad Project Total (tons)	**0.00**																

Onroad Vehicle Idling Emissions
Lightspeed SJC02
November 2019

Onroad Vehicle Idling NO_X Emissions from Lightspeed SJC02 Construction

Vehicle Type	NO_X Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.87	0.87	0.87	0.87	0.87	0.87	1.07	1.07
Material Hauling Trucks [a]	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.00
Onroad Total (lb/day)	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.01**	**1.01**	**1.01**	**1.01**	**1.01**	**1.01**	**1.07**	**1.07**
Vehicle Type	**NO_X Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	20.56	20.56	20.56	20.56	20.56	20.56	20.56	20.56	20.56	19.14	19.14	19.14	19.14	19.14	19.14	23.49	23.49
Material Hauling Trucks [a]	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.02	3.02	3.02	3.02	3.02	3.02	0.00	0.00
Onroad Total (lb/month)	**23.69**	**23.69**	**23.69**	**23.69**	**23.69**	**23.69**	**23.69**	**23.69**	**23.69**	**22.16**	**22.16**	**22.16**	**22.16**	**22.16**	**22.16**	**23.49**	**23.49**
Onroad Project Total (tons)	**0.20**																

Onroad Vehicle Idling PM_{10} Emissions from Lightspeed SJC02 Construction

Vehicle Type	PM_{10} Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	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	0.00
Material Hauling Trucks [a]	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	0.00
Onroad Total (lb/day)	**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**	**0.00**
Vehicle Type	**PM_{10} Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05
Material Hauling Trucks [a]	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	0.00
Onroad Total (lb/month)	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Onroad Project Total (tons)	**0.00**																

Onroad Vehicle Idling $PM_{2.5}$ Emissions from Lightspeed SJC02 Construction

Vehicle Type	$PM_{2.5}$ Emissions (lb/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	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	0.00
Material Hauling Trucks [a]	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	0.00
Onroad Total (lb/day)	**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**	**0.00**
Vehicle Type	**$PM_{2.5}$ Emissions (lb/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05
Material Hauling Trucks [a]	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	0.00
Onroad Total (lb/month)	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.05**	**0.05**
Onroad Project Total (tons)	**0.00**																

Onroad Vehicle Idling Emissions
Lightspeed SJC02
November 2019

Onroad Vehicle Idling CO_2 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CO_2 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06
Material Hauling Trucks [a]	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Onroad Total (metric tons/day)	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**
Vehicle Type	**CO_2 Emissions (metric tons/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.14	1.14	1.14	1.14	1.14	1.14	1.40	1.40
Material Hauling Trucks [a]	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00
Onroad Total (metric tons/month)	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**1.41**	**1.39**	**1.39**	**1.39**	**1.39**	**1.39**	**1.39**	**1.40**	**1.40**
Onroad Project Total (metric tons)	**23.80**																

Onroad Vehicle Idling CH_4 Emissions from Lightspeed SJC02 Construction

Vehicle Type	CH_4 Emissions (metric tons/day)																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	6.46E-07	6.46E-07	6.46E-07	6.46E-07	6.46E-07	6.46E-07	6.46E-07	6.46E-07	6.46E-07	6.25E-07	6.25E-07	6.25E-07	6.25E-07	6.25E-07	6.25E-07	7.67E-07	7.67E-07
Material Hauling Trucks [a]	2.07E-07	2.07E-07	2.07E-07	2.07E-07	2.07E-07	2.07E-07	2.07E-07	2.07E-07	2.07E-07	2.06E-07	2.06E-07	2.06E-07	2.06E-07	2.06E-07	2.06E-07	0.00E+00	0.00E+00
Onroad Total (metric tons/day)	**8.54E-07**	**8.54E-07**	**8.54E-07**	**8.54E-07**	**8.54E-07**	**8.54E-07**	**8.54E-07**	**8.54E-07**	**8.54E-07**	**8.31E-07**	**8.31E-07**	**8.31E-07**	**8.31E-07**	**8.31E-07**	**8.31E-07**	**7.67E-07**	**7.67E-07**
Vehicle Type	**CH_4 Emissions (metric tons/month) [b]**																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Onroad Delivery Trucks [a]	1.42E-05	1.42E-05	1.42E-05	1.42E-05	1.42E-05	1.42E-05	1.42E-05	1.42E-05	1.42E-05	1.38E-05	1.38E-05	1.38E-05	1.38E-05	1.38E-05	1.38E-05	1.69E-05	1.69E-05
Material Hauling Trucks [a]	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	4.53E-06	0.00E+00	0.00E+00
Onroad Total (metric tons/month)	**1.88E-05**	**1.88E-05**	**1.88E-05**	**1.88E-05**	**1.88E-05**	**1.88E-05**	**1.88E-05**	**1.88E-05**	**1.88E-05**	**1.83E-05**	**1.83E-05**	**1.83E-05**	**1.83E-05**	**1.83E-05**	**1.83E-05**	**1.69E-05**	**1.69E-05**
Onroad Project Total (metric tons)	**3.12E-04**																

Notes:
[a] It is estimated that each Onroad delivery truck and material haul truck idles for approximately 5 minutes each day, or: 0.083 idle-hrs/day.
[b] The days per month for construction in the data above was provided by the Applicant's engineering contractor.

Appendix 3.3-A, Table 15
Equations Used to Calculate Criteria Pollutant and GHG Emissions
Lightspeed SJC02
November 2019

Equations Used to Calculate Emissions from Lightspeed SJC02 Construction

Emission Source	Pollutants	Equations	Variables
Construction Equipment Exhaust	CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$	E_m = EF x N x Hp x L x H / 453.6	E_m = Emissions (lb/month)
			EF = Emission factor (g/bhp-hr)
			N = Number of pieces of equipment
			Hp = Average horsepower
			L = Average load factor
			H = Hours per month
			453.6 = Conversion from g to lb
		E_d = E_m / D	E_d = Emissions (lb/day)
			E_m = Emissions (lb/month)
			D = Number of construction days per month
		E_t = ΣE_m / 2,000	E_t = Total Project Emissions (tons)
			E_m = Emissions (lb/month)
			2,000 = Conversion from lb to tons
	CO_2	E_m = N x FC x EF x H x 0.001	E_m = Emissions (metric tons/month)
			N = Number of pieces of equipment
			FC = Fuel consumption (gallons/hour)
			EF = Emission factor (kg/gallon)
			H = Hours per month
			0.001 = Conversion from kg to metric tons
		E_d = E_m / D	E_d = Emissions (metric tons/day)
			E_m = Emissions (metric tons/month)
			D = Number of construction days per month
		E_t = ΣE_m	E_m = Emissions (metric tons/month)
			E_t = Total Project Emissions (metric tons)
	CH_4 and N_2O	E_m = N x FC x EF x H / 1,000 x 0.001	E_m = Emissions (metric tons/month)
			N = Number of pieces of equipment
			FC = Fuel consumption (gallons/hour)
			EF = Emission factor (g/gallon)
			H = Hours per month
			1,000 = Conversion from g to kg
			0.001 = Conversion from kg to metric tons
		E_d = E_m / D	E_d = Emissions (metric tons/day)
			E_m = Emissions (metric tons/month)
			D = Number of construction days per month
		E_t = ΣE_m	E_m = Emissions (metric tons/month)
			E_t = Total Project Emissions (metric tons)
Vehicle Exhaust and Paved Road Fugitive PM_{10} and $PM_{2.5}$	CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$	E_d = N x VMT x EF / 453.6	E_d = Emissions (lb/day)
			N = Number of vehicles
			VMT = Vehicle miles traveled per day (miles/day)
			EF = EMFAC2017 emission factor (g/mile). Paved road fugitive PM_{10} and $PM_{2.5}$ emission factors calculated per Section 13.2.1 of *AP-42* (EPA, 2011).
			453.6 = Conversion from g to lb
		E_m = E_d x D	E_m = Emissions (lb/month)
			E_d = Emissions (lb/day)
			D = Number of construction days per month
		E_t = ΣE_m / 2,000	E_t = Total Project Emissions (tons)
			E_m = Emissions (lb/month)
			2,000 = Conversion from lb to tons
Unpaved Road Fugitive PM_{10} and $PM_{2.5}$	PM_{10} and $PM_{2.5}$	E_d = N x VMT x EF	E_d = Emissions (lb/day)
			N = Number of vehicles
			VMT = Vehicle miles traveled per day (miles/day)
			EF = Unpaved road fugitive PM_{10} and $PM_{2.5}$ emission factors (lb/mile) calculated per Section 13.2.2 of *AP-42* (EPA, 2006).
		E_m = E_d x D	E_m = Emissions (lb/month)
			E_d = Emissions (lb/day)
			D = Number of construction days per month
		E_t = ΣE_m / 2,000	E_t = Total Project Emissions (tons)
			E_m = Emissions (lb/month)
			2,000 = Conversion from lb to tons

Equations Used to Calculate Criteria Pollutant and GHG Emissions
Lightspeed SJC02
November 2019

Equations Used to Calculate Emissions from Lightspeed SJC02 Construction

Emission Source	Pollutants	Equations	Variables
Vehicle Exhaust	CO_2	E_d = N x VMT / FE x EF x 0.001	E_d = Emissions (metric tons/day) N = Number of vehicles VMT = Vehicle miles traveled per day (miles/day) FE = Fuel economy (mpg) EF = Emission factor (kg/gallon) 0.001 = Conversion from kg to metric tons
		$E_m = E_d$ x D	E_m = Emissions (metric tons/month) E_d = Emissions (metric tons/day) D = Number of construction days per month
		$E_t = \Sigma E_m$	E_t = Total Project Emissions (metric tons) E_m = Emissions (metric tons/month)
	CH_4 and N_2O	E_d = N x VMT x EF / 1,000 x 0.001	E_d = Emissions (metric tons/day) N = Number of vehicles VMT = Vehicle miles traveled per day (miles/day) EF = Emission factor (g/mile) 1,000 = Conversion from g to kg 0.001 = Conversion from kg to metric tons
		$E_m = E_d$ x D	E_m = Emissions (metric tons/month) E_d = Emissions (metric tons/day) D = Number of construction days per month
		$E_t = \Sigma E_m$	E_m = Emissions (metric tons/month) E_t = Total Project Emissions (metric tons)
Vehicle Idling	CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$	E_d = N x I x EF / 453.6	E_d = Emissions (lb/day) N = Number of vehicles I = Idle time per vehicle per day (idle-hr/day) EF = EMFAC2017 emission factor (g/idle-hr) 453.6 = Conversion from g to lb
		$E_m = E_d$ x D	E_m = Emissions (lb/month) E_d = Emissions (lb/day) D = Number of construction days per month
		$E_t = \Sigma E_m$ / 2,000	E_t = Total Project Emissions (tons) E_m = Emissions (lb/month) 2,000 = Conversion from lb to tons
Vehicle Idling	CO_2 and CH_4	E_d = N x I x EF / 1,000 x 0.001	E_d = Emissions (metric tons/day) N = Number of vehicles I = Idle time per vehicle per day (idle-hr/day) EF = EMFAC2017 emission factor (g/idle-hr) 1,000 = Conversion from g to kg 0.001 = Conversion from kg to metric tons
		$E_m = E_d$ x D	E_m = Emissions (metric tons/month) E_d = Emissions (metric tons/day) D = Number of construction days per month
		$E_t = \Sigma E_m$	E_t = Total Project Emissions (metric tons) E_m = Emissions (metric tons/month)
Fugitive PM_{10} and $PM_{2.5}$ from Truck Dumping/Loading	PM_{10} and $PM_{2.5}$	E_d = V x 1.2641662 x EF / D	E_d = Emissions (lb/day) V= Volume of material dumped (cubic yards/month) 1.2641662 = Conversion from cubic yards to tons EF = Fugitive PM_{10} and $PM_{2.5}$ emission factors (lb/ton), calculated per Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017). D = Number of construction days per month
		$E_m = E_d$ x D	E_m = Emissions (lb/month) E_d = Emissions (lb/day) D = Number of construction days per month
		$E_t = \Sigma E_m$ / 2,000	E_m = Emissions (lb/month) E_t = Total Project Emissions (tons) 2,000 = Conversion from lb to tons

Equations Used to Calculate Criteria Pollutant and GHG Emissions
Lightspeed SJC02
November 2019

Equations Used to Calculate Emissions from Lightspeed SJC02 Construction

Emission Source	Pollutants	Equations	Variables
Fugitive PM_{10} and $PM_{2.5}$ from Grading	PM_{10} and $PM_{2.5}$	E_d = EF x A / W x 43,560 / 5,280 / D	E_d = Emissions (lb/day)
			EF = Fugitive PM_{10} and $PM_{2.5}$ emission factors (lb/mile), calculated per Section 4.3 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
			A = Graded area (acres/month)
			W = Grading equipment blade width (ft)
			43,560 = Conversion factor from square feet to acres
			5,280 = Conversion factor from feet to miles
			D = Number of construction days per month
		$E_m = E_d$ x D	E_m = Emissions (lb/month)
			E_d = Emissions (lb/day)
			D = Number of construction days per month
		$E_t = \Sigma E_m$ / 2,000	E_m = Emissions (lb/month)
			E_t = Total Project Emissions (tons)
			2,000 = Conversion from lb to tons
Fugitive PM_{10} and $PM_{2.5}$ from Dismemberment and Debris Loading	PM_{10} and $PM_{2.5}$	E_d = T x EF / D	E_d = Emissions (lb/day)
			T = Debris Generated from Mechanical Dismemberment (tons/month)
			D = Number of construction days per month
			EF = Fugitive PM_{10} and $PM_{2.5}$ emission factors (lb/ton), calculated per Section 4.4 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
		$E_m = E_d$ x D	E_m = Emissions (lb/month)
			E_d = Emissions (lb/day)
			D = Number of construction days per month
		$E_t = \Sigma E_m$ / 2,000	E_t = Total Project Emissions (tons)
			E_m = Emissions (lb/month)
			2,000 = Conversion from lb to tons
Paving	VOC	E_d = A / M / D x EF	EF = VOC emission factor (lb/acre), calculated per Section 4.8 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
			A = Area of paved areas (acres)
			E_d = Emissions (lb/day)
			D = Number of construction days per month
			M = Number of paving construction months
		$E_m = E_d$ x D	E_m = Emissions (lb/month)
			E_d = Emissions (lb/day)
			D = Number of construction days per month
		$E_t = \Sigma E_m$ / 2,000	E_t = Total Project Emissions (tons)
			E_m = Emissions (lb/month)
			2,000 = Conversion from lb to tons

Appendix 3.3-A, Table 16

Construction Equipment Criteria Pollutant Emission Factors

Lightspeed SJC02

November 2019

Construction Equipment Emission Factors for Lightspeed SJC02 Construction

Equipment [a]	Hours per Month [b]	Horsepower [c]	Load Factor [c]	2020 Emission Factors (g/bhp-hr) [d, e]						2021 Emission Factors (g/bhp-hr) [d, e]						2020 Fuel Consumption (gallons/hour) [f]
				CO	VOC	NO_X [h]	SO_X	PM_{10} [h]	$PM_{2.5}$	CO	VOC	NO_X [h]	SO_X	PM_{10} [h]	$PM_{2.5}$	
Onsite																
Water Truck [g]	220	402	0.38	1.414	0.246	0.260	0.005	0.008	0.079	1.338	0.225	0.260	0.005	0.008	0.066	4.15
Excavator	220	158	0.38	3.086	0.231	0.260	0.005	0.008	0.102	3.086	0.216	0.260	0.005	0.008	0.091	2.89
Grader	220	187	0.41	1.342	0.352	2.320	0.005	0.088	0.138	1.307	0.335	2.320	0.005	0.088	0.128	3.15
Cranes	220	231	0.29	1.790	0.384	2.320	0.005	0.088	0.173	1.678	0.349	2.320	0.005	0.088	0.153	2.19
Backhoe	220	97	0.37	3.601	0.331	0.260	0.005	0.008	0.193	3.571	0.296	0.260	0.005	0.008	0.162	1.59
Rubber Tired Loader	220	203	0.36	1.269	0.290	2.320	0.005	0.088	0.104	1.240	0.266	2.320	0.005	0.088	0.092	2.80
Forklift	220	89	0.20	3.760	0.459	2.740	0.005	0.192	0.283	3.720	0.412	2.740	0.005	0.192	0.245	2.00
Roller	220	80	0.38	3.531	0.388	2.740	0.005	0.192	0.228	3.507	0.353	2.740	0.005	0.192	0.202	1.35
Bore/Drill Rigs	220	221	0.5	1.068	0.142	0.260	0.005	0.008	0.048	1.064	0.132	0.260	0.005	0.008	0.043	3.90
Other General Industrial Equipment	220	88	0.34	3.771	0.446	2.740	0.005	0.192	0.272	3.740	0.404	2.740	0.005	0.192	0.235	1.38
Offsite																
Water Truck [g]	220	402	0.38	1.414	0.246	0.260	0.005	0.008	0.079	1.338	0.225	0.260	0.005	0.008	0.066	4.15
Concrete Truck [g]	220	402	0.38	1.414	0.246	0.260	0.005	0.008	0.079	1.338	0.225	0.260	0.005	0.008	0.066	4.15
Excavator	220	158	0.38	3.086	0.231	0.260	0.005	0.008	0.102	3.086	0.216	0.260	0.005	0.008	0.091	2.89
Grader	220	187	0.41	1.342	0.352	2.320	0.005	0.088	0.138	1.307	0.335	2.320	0.005	0.088	0.128	3.15
Backhoe	220	97	0.37	3.601	0.331	0.260	0.005	0.008	0.193	3.571	0.296	0.260	0.005	0.008	0.162	1.59
Rubber Tired Loader	220	203	0.36	1.269	0.290	2.320	0.005	0.088	0.104	1.240	0.266	2.320	0.005	0.088	0.092	2.80
Forklift	220	89	0.20	3.760	0.459	2.740	0.005	0.192	0.283	3.720	0.412	2.740	0.005	0.192	0.245	2.00
Roller	220	80	0.38	3.531	0.388	2.740	0.005	0.192	0.228	3.507	0.353	2.740	0.005	0.192	0.202	1.35
Bore/Drill Rigs	220	221	0.5	1.068	0.142	0.260	0.005	0.008	0.048	1.064	0.132	0.260	0.005	0.008	0.043	3.90

Notes:

[a] Assumed all equipment is fired with diesel fuel, per Section 4.2 of Appendix A of the CalEEMod User's Guide (BREEZE, 2017).

[b] Hours per month calculated based on the following schedule,

Work hours per day:	10
Work days per month:	22

[c] Construction equipment horsepower and load factor taken from Table 3.3 of Appendix D of the CalEEMod User's Guide (BREEZE, 2017).

[d] Unless otherwise noted, construction equipment emission factors taken from Table 3.4 of Appendix D of the CalEEMod User's Guide (BREEZE, 2017).

[e] Based on the anticipated construction schedule, Months 1 through 9 will occur in 2020 and Months 10 through 17 will occur in 2021. Emissions were estimated using year 2020 or 2021 emission factors and fuel consumption, as

[f] Fuel consumption based on consumption in the OFFROAD2017 Web database (https://www.arb.ca.gov/orion/) model for the San Francisco Bay Area in the year 2020 and 2021; value estimated by dividing the reported consumpt the reported activity (hours/year)

[g] Horsepower, load factor, and emission factors for Off-Highway Trucks were assumed representative of Water and Concrete Trucks.

Appendix 3.3-A, Table 17
Vehicle Criteria Pollutant Emission Factors
Lightspeed SJC02
November 2019

Vehicle Exhaust Emission Factors for Lightspeed SJC02 Construction

Vehicle Type	Location of Vehicle Operation	Vehicle Class [a]	2020 Exhaust Emission Factors (g/mile) [b, c]						2021 Exhaust Emission Factors (g/mile) [b, c]						Paved Road Emission Factors (g/mile) [d]		2020 Fuel Economy (mpg) [c, e]	2021 Fuel Economy (mpg) [c, e]
			CO	VOC	SO_X	NO_X	PM_{10}	$PM_{2.5}$	CO	VOC	SO_X	NO_X	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$		
Pick-up Truck	Onsite or Offsite, Offroad	Light-duty Truck	2.303	0.152	0.008	0.200	0.044	0.029	2.053	0.132	0.008	0.173	0.057	0.029	N/A	N/A	25.162	25.870
Onroad Delivery Trucks	Onroad	Heavy/Medium-duty Diesel	0.484	0.122	0.011	3.327	0.180	0.105	0.398	0.099	0.011	2.846	0.169	0.094	0.300	0.075	7.628	7.769
Material Hauling Trucks	Onroad	Heavy-duty Diesel	0.472	0.112	0.013	3.746	0.144	0.080	0.391	0.090	0.013	3.279	0.136	0.072	0.300	0.075	6.161	6.269
Construction Worker Commute	Onroad	Light-duty Auto/Truck	0.964	0.016	0.003	0.073	0.046	0.019	0.868	0.013	0.003	0.063	0.046	0.019	0.300	0.075	27.879	28.639
Dump Truck	Onsite or Offsite, Offroad	Heavy-duty Diesel	3.688	1.298	0.034	15.383	0.457	0.437	3.334	0.978	0.034	14.691	0.328	0.313	N/A	N/A	6.161	6.269

Vehicle Idling Emission Factors for Lightspeed Construction

Vehicle Type	Location of Vehicle Operation	Vehicle Class [a]	2020 Idle Emission Factors (g/idle-hr) [b, c]						2021 Idle Emission Factors (g/idle-hr) [b, c]					
			CO	VOC	SO_X	NO_X	PM_{10}	$PM_{2.5}$	CO	VOC	SO_X	NO_X	PM_{10}	$PM_{2.5}$
Onroad Delivery Trucks	Onroad	Heavy/Medium-duty Diesel	25.051	1.708	0.062	52.031	0.138	0.132	25.387	1.652	0.061	48.438	0.113	0.108
Material Hauling Trucks	Onroad	Heavy-duty Diesel	31.380	2.410	0.059	34.785	0.029	0.027	31.899	2.394	0.058	33.596	0.024	0.023
Dump Truck	Onsite or Offsite, Offroad	Heavy-duty Diesel	31.380	2.410	0.059	34.785	0.029	0.027	31.899	2.394	0.058	33.596	0.024	0.023

Notes:
[a] The vehicle classes are represented as follows:
Light-duty Truck: Assumed to be 50% LDT1 Gas and 50% LDT2 Gas values, based on an understanding of the vehicle type.
Heavy-duty Diesel: Assumed to be 100% HHDT DSL values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
Heavy/Medium-duty Diesel: Assumed to be 50% HHDT DSL and 50% MHDT DSL values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
Light-duty Auto/Truck: Assumed to be 50% LDA Gas, 25% LDT1 Gas, and 25% LDT2 Gas values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017) and assuming workers typically drive gasoline-fueled vehicles.
[b] Exhaust and idling emission factors from EMFAC2017 for Santa Clara County, calendar year 2020 and 2021. A speed of 5 mph was assumed for onsite and offsite vehicles; a speed of 40 mph was assumed for onroad vehicles and worker commutes, which is consistent with the CalEEMod defaults. An average temperature of 62°F and humidity of 63% were used per Table B-1 of *CT-EMFAC: A Computer Model to Estimate Transportation Project Emissions* (UC Davis, 2007).
[c] Based on the anticipated construction schedule, Months 1 through 9 will occur in 2020 and Months 10 through 17 will occur in 2021. Emissions were estimated using year 2020 or 2021 emission factors and fuel economy, as appropriate.
[d] Paved road emission factors calculated using CalEEMod methodology, as described below.
[e] Fuel economy from the EMFAC2017 Web Database (http://www.arb.ca.gov/emfac/2017/) for Santa Clara County, calendar year 2020 and 2021.

Derivation of Paved Road Emission Factors
Vehicles on Paved Roads

Parameter	PM_{10}	$PM_{2.5}$
Average Weight [a]	2.4	2.4
k [b]	1.0	0.25
sL [a]	0.1	0.1
Emission Factor (g/mile) [c]	0.300	0.075

Notes:
[a] Average Weight and sL taken as the CalEEMod defaults for the Santa Clara climate region of the San Francisco Bay Area Air Basin.
[b] k taken from Table 13.2.1-1 of Section 13.2.1 of *AP-42* (EPA, 2011).
[c] Emission factor calculated using Equation 1 from Section 13.2.1 of *AP-42* (EPA, 2011):
Emission Factor (g/mile) = k (g/mile) x [sL (g/m^2)]$^{0.91}$ x [Average Weight (tons)]$^{1.02}$

Appendix 3.3-A, Table 18
GHG Emission Factors
Lightspeed SJC02
November 2019

GHG Exhaust Emission Factors for Lightspeed SJC02 Construction

Fuel / Category Type	Emission Factor	Emission Factor Units	Emission Factor Source
CO_2 Emission Factors			
Gasoline	8.78	kg CO_2/gallon	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.1. May.
Diesel	10.21	kg CO_2/gallon	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.1. May.
N_2O Emission Factors			
Gasoline Passenger Car Model Year 2016 [a]	0.0183	g N_2O/mile	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.5. May.
Gasoline Light-duty Truck Model Year 2016 [a]	0.0079	g N_2O/mile	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.5. May.
Diesel Heavy-duty Truck Model Year 1960 - 2015 [a]	0.0048	g N_2O/mile	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.5. May.
Diesel Off-road Vehicle	0.495	g N_2O/gallon	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.7. May.
CH_4 Emission Factors			
Gasoline Passenger Car Model Year 2016 [a]	0.0064	g CH_4/mile	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.5. May.
Gasoline Light-duty Truck Model Year 2016 [a]	0.0064	g CH_4/mile	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.5. May.
Diesel Heavy-duty Truck Model Year 1960 - 2015 [a]	0.0051	g CH_4/mile	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.5. May.
Diesel Off-road Vehicle	0.342	g CH_4/gallon	The Climate Registry. 2019. *2019 Climate Registry Default Emission Factors*. Table 2.7. May.

Notes:
[a] Model Years 2015 and 2016 were the most recent years of emission factors available. As a result, they were assumed representative of vehicles used for this project.

GHG Idling Emission Factors (Diesel Vehicles Only) for Lightspeed SJC02 Construction

Vehicle Type	Vehicle Class [a]	2020 Idling Emission Factors (g/idle-hr) [b, c]		2021 Idling Emission Factors (g/idle-hr) [b, c]	
		CO_2	CH_4	CO_2	CH_4
Onroad Delivery Trucks	Heavy/Medium-duty Diesel	6,457.043	0.079	6,364.980	0.077
Material Hauling Trucks	Heavy-duty Diesel	6,154.064	0.112	6,065.927	0.111
Dump Truck	Heavy-duty Diesel	6,154.064	0.112	6,065.927	0.111

Notes:
[a] The vehicle classes are represented as follows:
Heavy-duty Diesel: Assumed to be 100% HHDT DSL values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).
Heavy/Medium-duty Diesel: Assumed to be 50% HHDT DSL and 50% MHDT DSL values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).

[b] Idling emission factors from EMFAC2017 for the Santa Clara County, calendar year 2020 and 2021. An average temperature of 62°F and humidity of 63% were used per Table B-1 of *CT-EMFAC: A Computer Model to Estimate Transportation Project Emissions* (UC Davis, 2007).

Appendix 3.3B
Operation Emissions

Appendix 3.3-B, Table 1
Operation Emissions - Summary for BAAQMD PTE Policy Analysis
Lightspeed SJC02
November 2019

Operational Details for Generators at 100% Load

Parameter	Units	Value	Comments
Total Number of Standby Generators	units	40	Total number of 3-MW standby generators to be permitted, including both primary and backup standby generators
Number of Primary Standy Generators	units	30	Assumes these generators are operated for both emergency operations and maintenance and testing purposes; the number of primary standby generators was determined based on the limitation of a maximum 92-MW energy output by the facility
Number of Backup Standy Generators	units	10	Assumes these backup standby generators are operated for maintenance and testing purposes, but would only be operated for emergency purposes if one of the primary standby generators was taken offline
Total Number of Administrative Generators	units	2	One 1.25-MW generator and one 0.5-MW generator to be permitted for emergency operations and maintenance and testing purposes
Annual Hours of Operation per Unit for Emergency Purposes	hrs/yr	100	Required by the BAAQMD's policy, Calculating Potential to Emit for Emergency Backup Power Generators (BAAQMD, 2019)
Annual Hours of Operation per Unit for Maintenance and Testing Purposes	hrs/yr	42	Maximum maintenance and testing hours proposed for each generator

Operation Criteria Pollutant Emissions

Annual Operation	Annual Emissions (tpy)					
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Standby Generators - Maximum PTE [a]	4.97	11.6	97.3	0.10	0.49	0.49
Standby Generators - Routine PTE [b]	1.78	4.16	34.9	0.04	0.18	0.18
Administrative Generators - Maximum PTE [c]	0.05	0.43	1.67	0.00	0.01	0.01
Administrative Generators - Routine PTE [d]	0.02	0.13	0.49	0.00	0.00	0.00
Mobile Sources	0.03	0.85	0.60	0.00	0.07	0.03
Facility Upkeep	2.77	0.00	0.00	0.00	0.00	0.00
Project Total [e]	**4.60**	**5.15**	**36.0**	**0.04**	**0.25**	**0.21**
BAAQMD Annual Thresholds of Significance [f]	10	--	10	--	15	10
Exceeds BAAQMD Annual Threshold (Y/N)?	N	N	Y	N	N	N
Standby and Administrative Generators - Maximum PTE [g]	**5.02**	**12.0**	**99.0**	**0.10**	**0.50**	**0.50**
Title V Threshold [h]	100	100	100	100	100	100
Exceeds Title V Threshold (Y/N)?	N	N	N	N	N	N
Prevention of Significant Deterioration (PSD) Threshold [i]	250	250	250	250	250	250
Exceeds PSD Threshold (Y/N)?	N	N	N	N	N	N

Notes:

[a] Maximum PTE emissions assume operation of all 40 standby diesel generators at 100% load. To comply with BAAQMD's policy, Calculating Potential to Emit for Emergency Backup Power Generators (BAAQMD, 2019), it is assumed that only 30 of the 40 standby generators would operate 142 hours per year, while the remaining 10 backup standby generators would operate only 42 hours per year.

[b] Routine PTE emissions assume operation of all 40 standby diesel generators at 100% load for only 42 hours per year for maintenance and testing purposes.

[c] Maximum PTE emissions assume operation of both adminstrative diesel generators at 100% load. To comply with BAAQMD's policy, Calculating Potential to Emit for Emergency Backup Power Generators (BAAQMD, 2019), it is assumed that both of the administrative generators would operate 142 hours per year.

[d] Routine PTE emissions assume operation of both administrative diesel generators at 100% load for only 42 hours per year for maintenance and testing purposes.

[e] For CEQA comparison purposes, the Project Total includes the routine PTE emissions for diesel generators, and emissions associated with offsite vehicles and ongoing facility upkeep.

[f] BAAQMD Thresholds of Significance taken from Table 2-1 of the 2017 CEQA Air Quality Guidelines (BAAQMD, 2017).

[g] For permitting comparison purposes, consistent with BAAQMD's policy (BAAQMD, 2019), the maximum PTE emissions for standby and administrative generators were used to determine Title V and PSD applicability.

[h] Title V applicability criteria taken from BAAQMD's Title V Applicability Criteria - Major Facility website, located at http://www.baaqmd.gov/permits/major-facility-review-title-v/title-v-applicability-criteria. This criteria is consistent with BAAQMD Regulation 2-2-217, Major Facility.

[i] U.S. EPA's PSD Thresholds taken from BAAQMD Regulation 2-2-224, PSD Project.

Appendix 3.3-B, Table 2
Routine Operation Emissions - Summary
Lightspeed SJC02
November 2019

Routine Operation Criteria Pollutant Emissions

Daily Operation	Average Daily Emissions (lbs/day) [a]						
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	NH_3
Standby and Administrative Generators	10.0	23.8	197	0.20	0.99	0.99	0.95
Mobile Sources	0.17	4.66	3.31	0.02	0.38	0.18	--
Facility Upkeep [b]	15.2	0.02	0.00	0.00	0.00	0.00	--
Unmitigated Project Total	25.3	28.5	200	0.23	1.37	1.17	0.95
Mitigation [c]	--	--	226	--	--	--	--
Mitigated Project Total	25.3	28.5	-26.2	0.23	1.37	1.17	0.95
BAAQMD Daily Thresholds of Significance [d]	54	--	54	--	82	54	--
Exceeds Daily Threshold (Y/N)?	N	N	N	N	N	N	N
Annual Operation	**Maximum Annual Emissions (tpy) [a]**						
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	NH_3
Standby and Administrative Generators	1.80	4.29	35.4	0.04	0.18	0.18	0.17
Mobile Sources	0.03	0.85	0.60	0.00	0.07	0.03	--
Facility Upkeep	2.77	0.00	0.00	0.00	0.00	0.00	--
Unmitigated Project Total	4.60	5.15	36.0	0.04	0.25	0.21	0.17
Mitigation [c]	--	--	40.7	--	--	--	--
Mitigated Project Total	4.60	5.15	-4.71	0.04	0.25	0.21	0.17
BAAQMD Annual Thresholds of Significance [d]	10	--	10	--	15	10	--
Exceeds Annual Threshold (Y/N)?	N	N	N	N	N	N	N

Routine Operation GHG Emissions

Annual Operation	Maximum Annual Emissions (metric tons/year) [a]			
	CO_2	CH_4	N_2O	CO_2e
Standby and Administrative Generators	3,517	0.14	0.03	3,529
Mobile Sources	453	0.01	0.02	457
Facility Upkeep	252,431	18.9	2.37	253,665
Project Total	256,401	19.1	2.41	257,651
BAAQMD Thresholds of Significance [d]	--	--	--	10,000
Exceeds Threshold (Y/N)? [E]	N	N	N	N

Notes:
[a] Emissions assume concurrent operation of all 40 standby and 2 administrative diesel generators at 100% load for 42 hours per year, even though 30 standby generators and both administrative generators are only expected to operate at any one time, and include emissions associated with offsite vehicles and ongoing facility upkeep (including storage tank refueling and operation of cooling units).
[b] The following factors were used to convert facility upkeep emissions from tpy to lbs/day:

1 year =	365	days
1 ton =	2,000	lbs

[c] Emissions presented as mitigation are subtracted from the unmitigated project emissions to determine total, mitigated project emissions. These emissions reductions will be achieved through the complete offset of NO_X emissions from routine operation of the standby and administrative generators, and were calculated based on the offset ratio of 1.15:1.
[d] BAAQMD Thresholds of Significance taken from Table 2-1 of the 2017 CEQA Air Quality Guidelines (BAAQMD, 2017).
[e] The GHG Threshold of Significance is pertinent to only stationary sources, such that only the standby and administrative generator emissions are compared.

Appendix 3.3-B, Table 3
Standby Diesel Generator: Performance Data
Lightspeed SJC02
November 2019

Performance Data

Parameter	Units	Certified Emission Factors Basis			Note
		100% Load	75% Load	50% Load	
Engine Power	BHP	4,307	3,256	2,206	1
Generator Power with Fan	MW	3.0	2.3	1.5	1
Fuel Consumption	gal/hr	202.0	158.0	113.0	2
Exhaust Stack Outlet Temperature	°F	830	714	670	1
Exhaust Gas Outlet Flow Rate	ft^3/min (cfm)	23,365	19,695	16,018	1
Heat Input	MMBtu/hr	27.9	21.8	15.6	3
Heating Value	MMBtu/gal	0.138	0.138	0.138	4
Operation					
Number of Standby Generators	units	40	40	40	5
Annual Hours of Operation per Unit	hrs/yr	42	42	42	6
Estimated Stack Emissions					
NO_X	g/hp-hr	4.38	4.38	4.38	7
CO	g/hp-hr	0.52	0.52	0.52	7
VOC	g/hp-hr	0.22	0.22	0.22	7
PM	g/hp-hr	0.02	0.02	0.02	1, 8
SO_2 - 15 ppmw Maximum Fuel Sulfur	lb/hp-hr	9.92E-06	1.03E-05	1.08E-05	9
NH_3 - 5 ppm Ammonia Slip	lb/hr	0.20	0.16	0.11	10
Stack Height	ft	30.00	30.00	30.00	11
Stack Diameter	in	30.00	30.00	30.00	11

Notes:

1. Reflects representative generator OEM information, as provided by the Applicant's engineering contractor.
2. Provided by the Applicant's engineering contractor.
3. Calculated from other data provided within the table.
4. The heating value of diesel is from 40 CFR 98, Table C-1 (for Distillate Fuel Oil No. 2).
5. Reflects intended project design.
6. In compliance with regulatory limit for standby generators of 50 hours per year, per 17 CCR 93115.6.
7. The Tier 2 emission factors presented below are based on the certification for Model Year 2018/2019 Cummins QSK-95, as obtained from EPA's Nonroad Compression Ignition Engines Certification Database (https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-vehicles-engines-and-equipment) or SCAQMD's ICE-Emergency Generator Certification Database (http://www.aqmd.gov/docs/default-source/permitting/product-certification/ice-cert-equip.xlsx):

Pollutant	Certified Emission Factors	Emission Factor Units	Emission Factor Source
NO_X	4.38	g/hp-hr	SCAQMD
CO	0.52	g/hp-hr	EPA
VOC as NMHC	0.22	g/hp-hr	EPA
PM	0.02	g/hp-hr	OEM Information

As needed, the above were converted to units of g/hp-hr using the following factor: 1 kW = 1.341 hp

8. The Tier 4 emissions factor is representative for the particulate matter emissions to include the control technology. This technology is the combination of an oxidation catalyst and a diesel particulate filter.
9. 13 CCR 2281 limits the sulfur content of California diesel fuel to 15 ppmw (https://www.arb.ca.gov/fuels/diesel/081404dslregs.pdf). The following conversion factors were used to calculate a SO_2 emission factor from this sulfur content:

Density of Diesel Fuel (lb/gal):	7.05	[*AP-42* , Appendix A, Page A-6 (EPA, 1985)]
Molecular Weight of Sulfur:	32	
Molecular Weight of SO_2:	64	

10. Ammonia emissions were estimated using EPA's Method 19 Equation 19-1 (EPA, 2017), for which the SCR is assumed to have a 5 ppm ammonia slip, and the following conversion factors:

1 ppm NH_3:	4.42E-08	lb/dscf @ 0% O_2 Ratio of Molecular Weights
F-Factor (Distillate):	9190	dscf/MMBtu
% O_2 in Stack:	15	%

11. Reflects drawings provided by the Applicant's engineering contractor.

Appendix 3.3-B, Table 4
Administrative Diesel Generator: Performance Data
Lightspeed SJC02
November 2019

Performance Data

Parameter	Units	Certified Emission Factors Basis			Note
		100% Load	75% Load	50% Load	
Engine Power	BHP	1,818	1,382	945	1
Generator Power with Fan	MW	1.25	0.94	0.63	1
Fuel Consumption	gal/hr	90.5	71.8	52.3	2
Exhaust Stack Outlet Temperature	°F	850	810	785	1
Exhaust Gas Outlet Flow Rate	ft^3/min (cfm)	10,417	9,249	7,243	1
Heat Input	MMBtu/hr	12.5	9.9	7.2	3
Heating Value	MMBtu/gal	0.138	0.138	0.138	4
Operation					
Number of Administrative Generators	units	1	1	1	5
Annual Hours of Operation per Unit	hrs/yr	42	42	42	6
Estimated Stack Emissions					
NO_X	g/hp-hr	4.03	4.03	4.03	7
CO	g/hp-hr	1.34	1.34	1.34	7
VOC	g/hp-hr	0.14	0.14	0.14	7
PM	g/hp-hr	0.02	0.02	0.02	1, 8
SO_2 - 15 ppmw Maximum Fuel Sulfur	lb/hp-hr	1.05E-05	1.10E-05	1.17E-05	9
NH_3 - 5 ppm Ammonia Slip	lb/hr	0.09	0.07	0.05	10
Stack Height	ft	20.00	20.00	20.00	11
Stack Diameter	in	20.00	20.00	20.00	11

Notes:

1. Reflects representative generator OEM information, as provided by the Applicant's engineering contractor.
2. Provided by the Applicant's engineering contractor.
3. Calculated from other data provided within the table.
4. The heating value of diesel is from 40 CFR 98, Table C-1 (for Distillate Fuel Oil No. 2).
5. Reflects intended project design.
6. In compliance with regulatory limit for standby generators of 50 hours per year, per 17 CCR 93115.6.
7. The Tier 2 emission factors presented below are based on the certification for Model Year 2018/2019 Cummins QSK-50, as obtained from EPA's Nonroad Compression Ignition Engines Certification Database (https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-vehicles-engines-and-equipment) or SCAQMD's ICE-Emergency Generator Certification Database (http://www.aqmd.gov/docs/default-source/permitting/product-certification/ice-cert-equip.xlsx):

Pollutant	Certified Emission Factors	Emission Factor Units	Emission Factor Source
NO_X	4.03	g/hp-hr	SCAQMD
CO	1.34	g/hp-hr	EPA
VOC as NMHC	0.14	g/hp-hr	SCAQMD
PM	0.02	g/hp-hr	OEM Information

As needed, the above were converted to units of g/hp-hr using the following factor: 1 kW = 1.341 hp

8. The Tier 4 emissions factor is representative for the particulate matter emissions to include the control technology. This technology is the combination of an oxidation catalyst and a diesel particulate filter.
9. 13 CCR 2281 limits the sulfur content of California diesel fuel to 15 ppmw (https://www.arb.ca.gov/fuels/diesel/081404dslregs.pdf). The following conversion factors were used to calculate a SO_2 emission factor from this sulfur content:

Density of Diesel Fuel (lb/gal):	7.05	[*AP-42* , Appendix A, Page A-6 (EPA, 1985)]
Molecular Weight of Sulfur:	32	
Molecular Weight of SO_2:	64	

10. Ammonia emissions were estimated using EPA's Method 19 Equation 19-1 (EPA, 2017), for which the SCR is assumed to have a 5 ppm ammonia slip, and the following conversion factors:

1 ppm NH_3:	4.42E-08	lb/dscf @ 0% O_2 Ratio of Molecular Weights
F-Factor (Distillate):	9190	dscf/MMBtu
% O_2 in Stack:	15	%

11. Reflects drawings provided by the Applicant's engineering contractor.

Appendix 3.3-B, Table 5
Administrative Diesel Generator: Performance Data
Lightspeed SJC02
November 2019

Performance Data

Parameter	Units	Certified Emission Factors Basis			Note
		100% Load	75% Load	50% Load	
Engine Power	BHP	731	554	378	1
Generator Power with Fan	MW	0.5	0.4	0.3	1
Fuel Consumption	gal/hr	34.4	25.7	18.8	2
Exhaust Stack Outlet Temperature	°F	894.0	852.0	828.0	1
Exhaust Gas Outlet Flow Rate	ft^3/min (cfm)	3,442.0	2,771.0	2,245.0	1
Heat Input	MMBtu/hr	4.7	3.5	2.6	3
Heating Value	MMBtu/gal	0.138	0.138	0.138	4
Operation					
Number of Administrative Generators	units	1	1	1	5
Annual Hours of Operation per Unit	hrs/yr	42	42	42	6
Estimated Stack Emissions					
NO_X	g/hp-hr	4.59	4.59	4.59	7
CO	g/hp-hr	0.45	0.45	0.45	7
VOC	g/hp-hr	0.11	0.11	0.11	7
PM	g/hp-hr	0.02	0.02	0.02	1, 8
SO_2 - 15 ppmw Maximum Fuel Sulfur	lb/hp-hr	9.95E-06	9.81E-06	1.05E-05	9
NH_3 - 5 ppm Ammonia Slip	lb/hr	0.03	0.03	0.02	10
Stack Height	ft	20	20	20	11
Stack Diameter	in	14	14	14	11

Notes:

1. Reflects representative generator OEM information, as provided by the Applicant's engineering contractor.
2. Provided by the Applicant's engineering contractor.
3. Calculated from other data provided within the table.
4. The heating value of diesel is from 40 CFR 98, Table C-1 (for Distillate Fuel Oil No. 2).
5. Reflects intended project design.
6. In compliance with regulatory limit for standby generators of 50 hours per year, per 17 CCR 93115.6.
7. The Tier 2 emission factors presented below are based on the certification for Model Year 2018/2019 Cummins QSX15, as obtained from EPA's Nonroad Compression Ignition Engines Certification Database (https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-vehicles-engines-and-equipment) or SCAQMD's ICE-Emergency Generator Certification Database (http://www.aqmd.gov/docs/default-source/permitting/product-certification/ice-cert-equip.xlsx):

Pollutant	Certified Emission Factors	Emission Factor Units	Emission Factor Source
NO_X	4.59	g/hp-hr	SCAQMD
CO	0.45	g/hp-hr	EPA
VOC as NMHC	0.11	g/hp-hr	SCAQMD
PM	0.02	g/hp-hr	OEM Information

As needed, the above were converted to units of g/hp-hr using the following factor: 1 kW = 1.341 hp

8. The Tier 4 emissions factor is representative for the particulate matter emissions to include the control technology. This technology is the combination of an oxidation catalyst and a diesel particulate filter.
9. 13 CCR 2281 limits the sulfur content of California diesel fuel to 15 ppmw (https://www.arb.ca.gov/fuels/diesel/081404dslregs.pdf). The following conversion factors were used to calculate a SO_2 emission factor from this sulfur content:

Density of Diesel Fuel (lb/gal):	7.05	[*AP-42* , Appendix A, Page A-6 (EPA, 1985)]
Molecular Weight of Sulfur:	32	
Molecular Weight of SO_2:	64	

10. Ammonia emissions were estimated using EPA's Method 19 Equation 19-1 (EPA, 2017), for which the SCR is assumed to have a 5 ppm ammonia slip, and the following conversion factors:

1 ppm NH_3:	4.42E-08	lb/dscf @ 0% O_2 Ratio of Molecular Weights
F-Factor (Distillate):	9190	dscf/MMBtu
% O_2 in Stack:	15	%

11. Reflects drawings provided by the Applicant's engineering contractor.

Appendix 3.3-B, Table 6
Standby Diesel Generator: Routine Operation Emissions - 3 MW Generator
Lightspeed SJC02
November 2019

Averaging Period	100% Load		75% Load		50% Load	
	Per Generator	40 Generator Total [e]	Per Generator	40 Generator Total [e]	Per Generator	40 Generator Total [e]
NO_X Emissions						
Hourly (lb/hr) [a]	41.6	1,664	31.4	1,258	21.3	852
Daily (lb/day) [b]	4.85	194	3.67	147	2.49	99
Monthly (lb/month) [c]	146	5,822	110	4,402	74.6	2,982
Annual (lb/year) [d]	1,747	69,869	1,320	52,820	895	35,786
Annual (tpy) [d]	8.73E-01	34.9	6.60E-01	2.64E+01	4.47E-01	1.79E+01
CO Emissions						
Hourly (lb/hr) [a]	4.96	198	3.75	150	2.54	102
Daily (lb/day) [b]	0.58	23.1	0.44	17.5	0.30	11.8
Monthly (lb/month) [c]	17.3	694	13.1	525	8.9	355
Annual (lb/year) [d]	208	8,327	157	6,295	107	4,265
Annual (tpy) [d]	1.04E-01	4.16	7.87E-02	3.15E+00	5.33E-02	2.13E+00
VOC Emissions						
Hourly (lb/hr) [a]	2.12	85	1.61	64.2	1.09	43.5
Daily (lb/day) [b]	0.25	9.9	0.19	7.5	0.13	5.08
Monthly (lb/month) [c]	7.43	297	5.62	225	3.81	152
Annual (lb/year) [d]	89.2	3,569	67.4	2,698	45.7	1,828
Annual (tpy) [d]	4.46E-02	1.78	3.37E-02	1.35E+00	2.28E-02	9.14E-01
SO_2 Emissions						
Hourly (lb/hr) [a]	0.04	1.71	0.03	1.34	0.02	0.96
Daily (lb/day) [b]	0.00	0.20	0.004	0.16	0.003	0.11
Monthly (lb/month) [c]	0.15	6.0	0.12	4.68	0.08	3.35
Annual (lb/year) [d]	1.79	72	1.40	56.1	1.00	40.2
Annual (tpy) [d]	8.97E-04	0.04	7.02E-04	2.81E-02	5.02E-04	2.01E-02
NH_3 Emissions						
Hourly (lb/hr) [a]	0.20	8.02	0.16	6.27	0.11	4.49
Daily (lb/day) [b]	0.02	0.94	0.02	0.73	0.01	0.52
Monthly (lb/month) [c]	0.70	28.08	0.55	21.96	0.39	15.71
Annual (lb/year) [d]	8.42	336.93	6.59	263.54	4.71	188.48
Annual (tpy) [d]	0.00	0.17	0.00	0.13	0.00	0.09
PM Emissions						
Hourly (lb/hr) [a]	0.21	8.36	0.16	6.32	0.11	4.28
Daily (lb/day) [b]	0.02	0.97	0.02	0.74	0.01	0.50
Monthly (lb/month) [c]	0.73	29.2	0.55	22.1	0.37	15.0
Annual (lb/year) [d]	8.77	351	6.63	265	4.49	180
Annual (tpy) [d]	4.39E-03	0.18	3.32E-03	1.33E-01	2.25E-03	8.99E-02

Notes:
[a] The hourly emission rates are for the diesel generator in standby operation only (i.e., excludes startup or shutdown emissions)
[b] The daily emission rates are the monthly emission rates averaged over 30 days.
[c] The monthly emission rates are the yearly emission rates averaged over 12 months.
[d] The annual emission rates assume a maximum of 42 hours of routine operation per year for each standby generator.
[e] Facility-wide emissions assume all 40 generators could operate concurrently, although the project expects to operate no more than 30 generators at once for maintenance and testing.

Standby Diesel Generator: Routine Operation Emissions - 3 MW Generator
Lightspeed SJC02
November 2019

Dispersion Model Inputs	100% Load	75% Load	50% Load
Stack Height (ft)	30.00	30.00	30.00
Stack Diameter (ft)	2.50	2.50	2.50
Stack Temperature (°F)	830	714	670
Stack Velocity (ft/s)	79.33	66.87	54.39
Modeling Emissions (lb/hr)			
NO_X (1-hour)	41.6	31.4	21.3
NO_X (Annual)	0.20	0.15	0.10
CO (1-hour)	4.96	3.75	2.54
CO (8-hour) [a]	2.48	1.87	1.27
SO_2 (1-hour)	4.27E-02	3.34E-02	2.39E-02
SO_2 (3-hour) [b]	4.27E-02	3.34E-02	2.39E-02
SO_2 (24-hour) [a]	7.12E-03	5.57E-03	3.98E-03
SO_2 (Annual)	2.05E-04	1.60E-04	1.15E-04
PM_{10} (24-hour) [a]	3.48E-02	2.63E-02	1.78E-02
PM_{10} (Annual)	1.00E-03	7.57E-04	5.13E-04
$PM_{2.5}$ (24-hour) [a]	3.48E-02	2.63E-02	1.78E-02
$PM_{2.5}$ (Annual)	1.00E-03	7.57E-04	5.13E-04

Notes:

[a] Modeled the emission rate for each 8- and 24-hour averaging period, as applicable, to demonstrate that each generator will only operate a maximum of 4 hours per day.
[b] The 3-hour SO_2 emission rate was set equal to the maximum 1-hour emission rate, based on the understanding that each generator could operate at the maximum 1-hour emission rate for 3 consecutive hours.

Appendix 3.3-B, Table 7
Administrative Diesel Generator: Routine Operation Emissions - 1.25-MW Generator
Lightspeed SJC02
November 2019

Averaging Period	100% Load Per Generator	75% Load Per Generator	50% Load Per Generator
NO_X Emissions			
Hourly (lb/hr) [a]	16.2	12.3	8.4
Daily (lb/day) [b]	1.88	1.43	0.98
Monthly (lb/month) [c]	57	43	29.4
Annual (lb/year) [d]	678	516	353
Annual (tpy) [d]	3.39E-01	2.58E-01	1.76E-01
CO Emissions			
Hourly (lb/hr) [a]	5.38	4.09	2.80
Daily (lb/day) [b]	0.63	0.48	0.33
Monthly (lb/month) [c]	18.8	14.3	9.8
Annual (lb/year) [d]	226	172	117
Annual (tpy) [d]	1.13E-01	8.59E-02	5.87E-02
VOC Emissions			
Hourly (lb/hr) [a]	0.56	0.43	0.29
Daily (lb/day) [b]	0.07	0.05	0.03
Monthly (lb/month) [c]	1.96	1.49	1.02
Annual (lb/year) [d]	23.6	17.9	12.3
Annual (tpy) [d]	1.18E-02	8.96E-03	6.13E-03
SO_2 Emissions			
Hourly (lb/hr) [a]	0.02	0.02	0.01
Daily (lb/day) [b]	0.00	0.002	0.001
Monthly (lb/month) [c]	0.07	0.05	0.04
Annual (lb/year) [d]	0.80	0.64	0.46
Annual (tpy) [d]	4.02E-04	3.19E-04	2.32E-04
NH_3 Emissions			
Hourly (lb/hr) [a]	8.99E-02	0.07	5.19E-02
Daily (lb/day) [b]	1.05E-02	0.01	6.06E-03
Monthly (lb/month) [c]	3.14E-01	0.25	1.82E-01
Annual (lb/year) [d]	3.77E+00	2.99	2.18E+00
Annual (tpy) [d]	1.89E-03	0.00	1.09E-03
PM Emissions			
Hourly (lb/hr) [a]	0.09	0.07	0.05
Daily (lb/day) [b]	0.01	0.01	0.01
Monthly (lb/month) [c]	0.31	0.23	0.16
Annual (lb/year) [d]	3.70	2.82	1.93
Annual (tpy) [d]	1.85E-03	1.41E-03	9.63E-04

Notes:

[a] The hourly emission rates are for the diesel generator in standby operation only (i.e., excludes startup or shutdown emissions).

[b] The daily emission rates are the monthly emission rates averaged over 30 days.

[c] The monthly emission rates are the yearly emission rates averaged over 12 months.

[d] The annual emission rates assume a maximum of 42 hours of routine operation per year for the one 1.25-MW generator.

Administrative Diesel Generator: Routine Operation Emissions - 1.25-MW Generator

Lightspeed SJC02

November 2019

Dispersion Model Inputs	100% Load	75% Load	50% Load
Stack Height (ft)	20.0	20.0	20.0
Stack Diameter (ft)	1.67	1.67	1.67
Stack Temperature (°F)	850	810	785
Stack Velocity (ft/s)	79.58	70.66	55.33
Modeling Emissions (lb/hr)			
NO_X (1-hour)	16.2	12.3	8.4
NO_X (Annual)	0.08	0.06	0.04
CO (1-hour)	5.38	4.09	2.80
CO (8-hour) [a]	2.69	2.04	1.40
SO_2 (1-hour)	1.91E-02	1.52E-02	1.11E-02
SO_2 (3-hour) [b]	1.91E-02	1.52E-02	1.11E-02
SO_2 (24-hour) [a]	3.19E-03	2.53E-03	1.84E-03
SO_2 (Annual)	9.18E-05	7.28E-05	5.30E-05
PM_{10} (24-hour) [a]	1.47E-02	1.12E-02	7.64E-03
PM_{10} (Annual)	4.23E-04	3.21E-04	2.20E-04
$PM_{2.5}$ (24-hour) [a]	1.47E-02	1.12E-02	7.64E-03
$PM_{2.5}$ (Annual)	4.23E-04	3.21E-04	2.20E-04

Notes:

[a] Modeled the emission rate for each 8- and 24-hour averaging period, as applicable, to demonstrate that each generator will only operate a maximum of 4 hours per day.

[b] The 3-hour SO_2 emission rate was set equal to the maximum 1-hour emission rate, based on the understanding that each generator could operate at the maximum 1-hour emission rate for 3 consecutive hours.

Appendix 3.3-B, Table 8

Adminstrative Diesel Generator: Routine Operation Emissions - 0.5-MW Generator

Lightspeed SJC02

November 2019

Averaging Period	100% Load	75% Load	50% Load
	Per Generator	Per Generator	Per Generator
NO_X Emissions			
Hourly (lb/hr) [a]	7.4	5.6	3.8
Daily (lb/day) [b]	0.86	0.65	0.45
Monthly (lb/month) [c]	26	20	13.4
Annual (lb/year) [d]	311	235	161
Annual (tpy) [d]	1.55E-01	1.18E-01	8.03E-02
CO Emissions			
Hourly (lb/hr) [a]	0.72	0.55	0.37
Daily (lb/day) [b]	0.08	0.06	0.04
Monthly (lb/month) [c]	2.5	1.9	1.3
Annual (lb/year) [d]	30	23	16
Annual (tpy) [d]	1.51E-02	1.15E-02	7.83E-03
VOC Emissions			
Hourly (lb/hr) [a]	0.18	0.13	0.09
Daily (lb/day) [b]	0.02	0.02	0.01
Monthly (lb/month) [c]	0.62	0.47	0.32
Annual (lb/year) [d]	7.4	5.6	3.9
Annual (tpy) [d]	3.72E-03	2.82E-03	1.93E-03
SO_2 Emissions			
Hourly (lb/hr) [a]	0.01	0.01	0.00
Daily (lb/day) [b]	0.00	0.001	0.000
Monthly (lb/month) [c]	0.03	0.02	0.01
Annual (lb/year) [d]	0.31	0.23	0.17
Annual (tpy) [d]	1.53E-04	1.14E-04	8.35E-05
NH_3 Emissions			
Hourly (lb/hr) [a]	3.42E-02	0.03	1.87E-02
Daily (lb/day) [b]	3.98E-03	0.00	2.18E-03
Monthly (lb/month) [c]	1.20E-01	0.09	6.53E-02
Annual (lb/year) [d]	1.43E+00	1.07	7.84E-01
Annual (tpy) [d]	7.17E-04	0.00	3.92E-04
PM Emissions			
Hourly (lb/hr) [a]	0.04	0.03	0.02
Daily (lb/day) [b]	0.00	0.00	0.00
Monthly (lb/month) [c]	0.12	0.09	0.06
Annual (lb/year) [d]	1.49	1.13	0.77
Annual (tpy) [d]	7.45E-04	5.64E-04	3.85E-04

Notes:

[a] The hourly emission rates are for the diesel generator in standby operation only (i.e., excludes startup or shutdown emissions).

[b] The daily emission rates are the monthly emission rates averaged over 30 days.

[c] The monthly emission rates are the yearly emission rates averaged over 12 months.

[d] The annual emission rates assume a maximum of 42 hours of routine operation per year for the one 0.5-MW generator.

Adminstrative Diesel Generator: Routine Operation Emissions - 0.5-MW Generator

Lightspeed SJC02

November 2019

Dispersion Model Inputs	**100% Load**	**75% Load**	**50% Load**
Stack Height (ft)	20.0	20.0	20.0
Stack Diameter (ft)	1.17	1.17	1.17
Stack Temperature (°F)	894	852	828
Stack Velocity (ft/s)	53.66	43.20	35.00
Modeling Emissions (lb/hr)			
NO_X (1-hour)	7.4	5.6	3.8
NO_X (Annual)	0.04	0.03	0.02
CO (1-hour)	0.72	0.55	0.37
CO (8-hour) [a]	0.36	0.27	0.19
SO_2 (1-hour)	7.28E-03	5.44E-03	3.98E-03
SO_2 (3-hour) [b]	7.28E-03	5.44E-03	3.98E-03
SO_2 (24-hour) [a]	1.21E-03	9.06E-04	6.63E-04
SO_2 (Annual)	3.49E-05	2.61E-05	1.91E-05
PM_{10} (24-hour) [a]	5.91E-03	4.48E-03	3.06E-03
PM_{10} (Annual)	1.70E-04	1.29E-04	8.79E-05
$PM_{2.5}$ (24-hour) [a]	5.91E-03	4.48E-03	3.06E-03
$PM_{2.5}$ (Annual)	1.70E-04	1.29E-04	8.79E-05

Notes:

[a] Modeled the emission rate for each 8- and 24-hour averaging period, as applicable, to demonstrate that each generator will only operate a maximum of 4 hours per day.

[b] The 3-hour SO_2 emission rate was set equal to the maximum 1-hour emission rate, based on the understanding that each generator could operate at the maximum 1-hour emission rate for 3 consecutive hours.

Appendix 3.3-B, Table 9
Diesel Generators: Routine Operation Emissions - Air Toxics
Lightspeed SJC02
November 2019

Parameter	3-MW	1.25-MW	0.5-MW	Units
Number of Generators for Routine Operation	40	1	1	units
Annual Hours of Routine Operation per Unit	42	42	42	hrs/yr
Maximum Hourly Heat Input per Unit at 100% Load	27.9	12.5	4.7	MMBtu/hr
Maximum Annual Heat Input per Unit at 100% Load	1,171	525	199	MMBtu/yr

Pollutant	Emission Factors	Facility-Wide Emissions [b]			Per Generator Emissions (3-MW)			Per Generator Emissions (1.25-MW)			Per Generator Emissions (0.5-MW)			Classification	
	lb/MMBtu [a]	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	TAC [c]	HAP [d]
Acenaphthene	4.68E-06	5.30E-03	2.23E-01	1.11E-04	1.30E-04	5.48E-03	2.74E-06	5.84E-05	2.45E-03	1.23E-06	2.22E-05	9.33E-04	4.67E-07	--	--
Acenaphthylene	9.23E-06	1.05E-02	4.39E-01	2.19E-04	2.57E-04	1.08E-02	5.40E-06	1.15E-04	4.84E-03	2.42E-06	4.38E-05	1.84E-03	9.20E-07	--	--
Acetaldehye [e]	2.52E-05	2.85E-02	1.20E+00	5.99E-04	7.02E-04	2.95E-02	1.48E-05	3.15E-04	1.32E-02	6.61E-06	1.20E-04	5.02E-03	2.51E-06	X	X
Acrolein [e]	7.88E-06	8.92E-03	3.75E-01	1.87E-04	2.20E-04	9.23E-03	4.61E-06	9.84E-05	4.13E-03	2.07E-06	3.74E-05	1.57E-03	7.86E-07	X	X
Ammonia [f]	--	8.15E+00	3.42E+02	1.71E-01	2.01E-01	8.42E+00	4.21E-03	8.99E-02	3.77E+00	1.89E-03	3.42E-02	1.43E+00	7.17E-04	X	--
Anthracene	1.23E-06	1.39E-03	5.85E-02	2.92E-05	3.43E-05	1.44E-03	7.20E-07	1.54E-05	6.45E-04	3.23E-07	5.84E-06	2.45E-04	1.23E-07	--	--
Benz(a)anthracene	6.22E-07	7.04E-04	2.96E-02	1.48E-05	1.73E-05	7.28E-04	3.64E-07	7.77E-06	3.26E-04	1.63E-07	2.95E-06	1.24E-04	6.20E-08	X	--
Benzene [e]	7.76E-04	8.79E-01	3.69E+01	1.85E-02	2.16E-02	9.09E-01	4.54E-04	9.69E-03	4.07E-01	2.04E-04	3.68E-03	1.55E-01	7.74E-05	X	X
Benzo(a)pyrene	2.57E-07	2.91E-04	1.22E-02	6.11E-06	7.16E-06	3.01E-04	1.50E-07	3.21E-06	1.35E-04	6.74E-08	1.22E-06	5.12E-05	2.56E-08	X	--
Benzo(b)fluoranthene	1.11E-06	1.26E-03	5.28E-02	2.64E-05	3.09E-05	1.30E-03	6.50E-07	1.39E-05	5.82E-04	2.91E-07	5.27E-06	2.21E-04	1.11E-07	X	--
Benzo(g,h,l)perylene	5.56E-07	6.30E-04	2.64E-02	1.32E-05	1.55E-05	6.51E-04	3.25E-07	6.94E-06	2.92E-04	1.46E-07	2.64E-06	1.11E-04	5.54E-08	--	--
Benzo(k)fluoranthene	2.18E-07	2.47E-04	1.04E-02	5.18E-06	6.08E-06	2.55E-04	1.28E-07	2.72E-06	1.14E-04	5.72E-08	1.03E-06	4.35E-05	2.17E-08	X	--
Chrysene	1.53E-06	1.73E-03	7.28E-02	3.64E-05	4.27E-05	1.79E-03	8.96E-07	1.91E-05	8.03E-04	4.01E-07	7.26E-06	3.05E-04	1.53E-07	X	--
Dibenz(a,h)anthracene	3.46E-07	3.92E-04	1.65E-02	8.23E-06	9.65E-06	4.05E-04	2.03E-07	4.32E-06	1.81E-04	9.07E-08	1.64E-06	6.90E-05	3.45E-08	X	--
Diesel Particulate Matter [f]	--	8.48E+00	3.56E+02	1.78E-01	2.09E-01	8.77E+00	4.39E-03	8.82E-02	3.70E+00	1.85E-03	3.55E-02	1.49E+00	7.45E-04	X	--
Fluoranthene	4.03E-06	4.56E-03	1.92E-01	9.58E-05	1.12E-04	4.72E-03	2.36E-06	5.03E-05	2.11E-03	1.06E-06	1.91E-05	8.04E-04	4.02E-07	--	--
Fluorene	1.28E-05	1.45E-02	6.09E-01	3.04E-04	3.57E-04	1.50E-02	7.49E-06	1.60E-04	6.71E-03	3.36E-06	6.08E-05	2.55E-03	1.28E-06	--	--
Formaldehyde [e]	7.89E-05	8.93E-02	3.75E+00	1.88E-03	2.20E-03	9.24E-02	4.62E-05	9.85E-04	4.14E-02	2.07E-05	3.75E-04	1.57E-02	7.87E-06	X	X
Indeno(1,2,3-cd)pyrene	4.14E-07	4.69E-04	1.97E-02	9.84E-06	1.15E-05	4.85E-04	2.42E-07	5.17E-06	2.17E-04	1.09E-07	1.97E-06	8.25E-05	4.13E-08	X	--
Naphthalene	1.30E-04	1.47E-01	6.18E+00	3.09E-03	3.62E-03	1.52E-01	7.61E-05	1.62E-03	6.82E-02	3.41E-05	6.17E-04	2.59E-02	1.30E-05	X	X
Phenanthrene	4.08E-05	4.62E-02	1.94E+00	9.70E-04	1.14E-03	4.78E-02	2.39E-05	5.10E-04	2.14E-02	1.07E-05	1.94E-04	8.13E-03	4.07E-06	--	--
Propylene [e]	2.79E-03	3.16E+00	1.33E+02	6.63E-02	7.78E-02	3.27E+00	1.63E-03	3.48E-02	1.46E+00	7.32E-04	1.32E-02	5.56E-01	2.78E-04	X	--
Pyrene	3.71E-06	4.20E-03	1.76E-01	8.82E-05	1.03E-04	4.34E-03	2.17E-06	4.63E-05	1.95E-03	9.73E-07	1.76E-05	7.40E-04	3.70E-07	--	--
Toluene [e]	2.81E-04	3.18E-01	1.34E+01	6.68E-03	7.83E-03	3.29E-01	1.64E-04	3.51E-03	1.47E-01	7.37E-05	1.33E-03	5.60E-02	2.80E-05	X	X
Total PAH	2.12E-04	2.40E-01	1.01E+01	5.04E-03	5.91E-03	2.48E-01	1.24E-04	2.65E-03	1.11E-01	5.56E-05	1.01E-03	4.23E-02	2.11E-05	X	--
Xylenes [e]	1.93E-04	2.19E-01	9.18E+00	4.59E-03	5.38E-03	2.26E-01	1.13E-04	2.41E-03	1.01E-01	5.06E-05	9.16E-04	3.85E-02	1.92E-05	X	X
TOTAL HAPs		**1.69E+00**	**7.10E+01**	**3.55E-02**	**4.16E-02**	**1.75E+00**	**8.73E-04**	**1.86E-02**	**7.83E-01**	**3.91E-04**	**7.08E-03**	**2.97E-01**	**1.49E-04**		
TOTAL TACs		**2.15E+01**	**9.02E+02**	**4.51E-01**	**5.29E-01**	**2.22E+01**	**1.11E-02**	**2.32E-01**	**9.73E+00**	**4.86E-03**	**9.00E-02**	**3.78E+00**	**1.89E-03**		
TOTAL Air Toxics [g]		**2.18E+01**	**9.16E+02**	**4.58E-01**	**5.37E-01**	**2.26E+01**	**1.13E-02**	**2.35E-01**	**9.88E+00**	**4.94E-03**	**9.13E-02**	**3.84E+00**	**1.92E-03**		

Notes:
[a] Unless otherwise noted, the emission factors are from Section 3.4, Table 3.4-4 of AP-42 (EPA, 1996).
[b] The only source of onsite air toxics is operation of the standby and administrative diesel generators. It was assumed that all 40 standby and 2 administrative generators could operate concurrently for maintenance and testing.
[c] The Toxic Air Contaminants (TACs) were identified per the Bay Area Air Quality Management District's (BAAQMD) Rule 2-5, Table 2-5-1 (http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2002/rg0205.ashx).
[d] The Hazardous Air Pollutants (HAPs) were identified based on the EPA's list of HAPs (https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications).
[e] The emission factors are from Section 3.4, Table 3.4-3 of AP-42 (EPA, 1996).
[f] Diesel particulate matter (PM) and ammonia emissions were estimated from the criteria pollutant PM and NH_3 emissions, respectively.
[g] All Air Toxics, including DPM and speciated diesel exhaust pollutants, were conservatively summed for comparison to applicable regulatory thresholds.

Appendix 3.3-B, Table 10
Diesel Generators: Emergency Operation Emissions - Air Toxics
Lightspeed SJC02
November 2019

Parameter	3-MW	1.25-MW	0.5-MW	Units
Number of Generators for Emergency Operation	30	1	1	units
Annual Hours of Emergency Operation per Unit	100	100	100	hrs/yr
Maximum Hourly Heat Input per Unit at 100% Load	27.9	12.5	4.7	MMBtu/hr
Maximum Annual Heat Input per Unit at 100% Load	2,788	1,249	475	MMBtu/yr

Pollutant	Emission Factors	Facility-Wide Emissions [b]			Per Generator Emissions (3-MW)			Per Generator Emissions (1.25-MW)			Per Generator Emissions (0.5-MW)			Classification	
	lb/MMBtu [a]	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	lb/hr	lb/yr	tpy	TAC [c]	HAP [d]
Acenaphthene	4.68E-06	3.99E-03	3.99E-01	2.00E-04	1.30E-04	1.30E-02	6.52E-06	5.84E-05	5.84E-03	2.92E-06	2.22E-05	2.22E-03	1.11E-06	--	--
Acenaphthylene	9.23E-06	7.88E-03	7.88E-01	3.94E-04	2.57E-04	2.57E-02	1.29E-05	1.15E-04	1.15E-02	5.76E-06	4.38E-05	4.38E-03	2.19E-06	--	--
Acetaldehye [e]	2.52E-05	2.15E-02	2.15E+00	1.08E-03	7.02E-04	7.02E-02	3.51E-05	3.15E-04	3.15E-02	1.57E-05	1.20E-04	1.20E-02	5.98E-06	X	X
Acrolein [e]	7.88E-06	6.73E-03	6.73E-01	3.36E-04	2.20E-04	2.20E-02	1.10E-05	9.84E-05	9.84E-03	4.92E-06	3.74E-05	3.74E-03	1.87E-06	X	X
Ammonia [f]	--	8.15E+00	3.42E+02	1.71E-01	2.01E-01	2.01E+01	1.00E-02	8.99E-02	8.99E+00	4.49E-03	3.42E-02	3.42E+00	1.71E-03	X	--
Anthracene	1.23E-06	1.05E-03	1.05E-01	5.25E-05	3.43E-05	3.43E-03	1.71E-06	1.54E-05	1.54E-03	7.68E-07	5.84E-06	5.84E-04	2.92E-07	--	--
Benz(a)anthracene	6.22E-07	5.31E-04	5.31E-02	2.65E-05	1.73E-05	1.73E-03	8.67E-07	7.77E-06	7.77E-04	3.88E-07	2.95E-06	2.95E-04	1.48E-07	X	--
Benzene [e]	7.76E-04	6.62E-01	6.62E+01	3.31E-02	2.16E-02	2.16E+00	1.08E-03	9.69E-03	9.69E-01	4.85E-04	3.68E-03	3.68E-01	1.84E-04	X	X
Benzo(a)pyrene	2.57E-07	2.19E-04	2.19E-02	1.10E-05	7.16E-06	7.16E-04	3.58E-07	3.21E-06	3.21E-04	1.60E-07	1.22E-06	1.22E-04	6.10E-08	X	--
Benzo(b)fluoranthene	1.11E-06	9.47E-04	9.47E-02	4.74E-05	3.09E-05	3.09E-03	1.55E-06	1.39E-05	1.39E-03	6.93E-07	5.27E-06	5.27E-04	2.63E-07	X	--
Benzo(g,h,l)perylene	5.56E-07	4.75E-04	4.75E-02	2.37E-05	1.55E-05	1.55E-03	7.75E-07	6.94E-06	6.94E-04	3.47E-07	2.64E-06	2.64E-04	1.32E-07	--	--
Benzo(k)fluoranthene	2.18E-07	1.86E-04	1.86E-02	9.30E-06	6.08E-06	6.08E-04	3.04E-07	2.72E-06	2.72E-04	1.36E-07	1.03E-06	1.03E-04	5.17E-08	X	--
Chrysene	1.53E-06	1.31E-03	1.31E-01	6.53E-05	4.27E-05	4.27E-03	2.13E-06	1.91E-05	1.91E-03	9.55E-07	7.26E-06	7.26E-04	3.63E-07	X	--
Dibenz(a,h)anthracene	3.46E-07	2.95E-04	2.95E-02	1.48E-05	9.65E-06	9.65E-04	4.82E-07	4.32E-06	4.32E-04	2.16E-07	1.64E-06	1.64E-04	8.21E-08	X	--
Diesel Particulate Matter [f]	--	8.48E+00	3.56E+02	1.78E-01	2.09E-01	2.09E+01	1.04E-02	8.82E-02	8.82E+00	4.41E-03	3.55E-02	3.55E+00	1.77E-03	X	--
Fluoranthene	4.03E-06	3.44E-03	3.44E-01	1.72E-04	1.12E-04	1.12E-02	5.62E-06	5.03E-05	5.03E-03	2.52E-06	1.91E-05	1.91E-03	9.57E-07	--	--
Fluorene	1.28E-05	1.09E-02	1.09E+00	5.46E-04	3.57E-04	3.57E-02	1.78E-05	1.60E-04	1.60E-02	7.99E-06	6.08E-05	6.08E-03	3.04E-06	--	--
Formaldehyde [e]	7.89E-05	6.73E-02	6.73E+00	3.37E-03	2.20E-03	2.20E-01	1.10E-04	9.85E-04	9.85E-02	4.93E-05	3.75E-04	3.75E-02	1.87E-05	X	X
Indeno(1,2,3-cd)pyrene	4.14E-07	3.53E-04	3.53E-02	1.77E-05	1.15E-05	1.15E-03	5.77E-07	5.17E-06	5.17E-04	2.59E-07	1.97E-06	1.97E-04	9.83E-08	X	--
Naphthalene	1.30E-04	1.11E-01	1.11E+01	5.55E-03	3.62E-03	3.62E-01	1.81E-04	1.62E-03	1.62E-01	8.12E-05	6.17E-04	6.17E-02	3.09E-05	X	X
Phenanthrene	4.08E-05	3.48E-02	3.48E+00	1.74E-03	1.14E-03	1.14E-01	5.69E-05	5.10E-04	5.10E-02	2.55E-05	1.94E-04	1.94E-02	9.68E-06	--	--
Propylene [e]	2.79E-03	2.38E+00	2.38E+02	1.19E-01	7.78E-02	7.78E+00	3.89E-03	3.48E-02	3.48E+00	1.74E-03	1.32E-02	1.32E+00	6.62E-04	X	--
Pyrene	3.71E-06	3.17E-03	3.17E-01	1.58E-04	1.03E-04	1.03E-02	5.17E-06	4.63E-05	4.63E-03	2.32E-06	1.76E-05	1.76E-03	8.81E-07	--	--
Toluene [e]	2.81E-04	2.40E-01	2.40E+01	1.20E-02	7.83E-03	7.83E-01	3.92E-04	3.51E-03	3.51E-01	1.75E-04	1.33E-03	1.33E-01	6.67E-05	X	X
Total PAH	2.12E-04	1.81E-01	1.81E+01	9.05E-03	5.91E-03	5.91E-01	2.95E-04	2.65E-03	2.65E-01	1.32E-04	1.01E-03	1.01E-01	5.03E-05	X	--
Xylenes [e]	1.93E-04	1.65E-01	1.65E+01	8.24E-03	5.38E-03	5.38E-01	2.69E-04	2.41E-03	2.41E-01	1.21E-04	9.16E-04	9.16E-02	4.58E-05	X	X
TOTAL HAPs		**1.27E+00**	**1.27E+02**	**6.37E-02**	**4.16E-02**	**4.16E+00**	**2.08E-03**	**1.86E-02**	**1.86E+00**	**9.32E-04**	**7.08E-03**	**7.08E-01**	**3.54E-04**		
TOTAL TACs		**2.03E+01**	**1.06E+03**	**5.32E-01**	**5.29E-01**	**5.29E+01**	**2.64E-02**	**2.32E-01**	**2.32E+01**	**1.16E-02**	**9.00E-02**	**9.00E+00**	**4.50E-03**		
TOTAL Air Toxics [g]		**2.05E+01**	**1.09E+03**	**5.44E-01**	**5.37E-01**	**5.37E+01**	**2.68E-02**	**2.35E-01**	**2.35E+01**	**1.18E-02**	**9.13E-02**	**9.13E+00**	**4.57E-03**		

Notes:
[a] Unless otherwise noted, the emission factors are from Section 3.4, Table 3.4-4 of AP-42 (EPA, 1996).
[b] The only source of onsite air toxics is operation of the standby and administrative diesel generators. It was assumed that 30 standby and 2 administrative generators could operate concurrently for emergency purposes.
[c] The Toxic Air Contaminants (TACs) were identified per the Bay Area Air Quality Management District's (BAAQMD) Rule 2-5, Table 2-5-1 (http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2002/rg0205.ashx).
[d] The Hazardous Air Pollutants (HAPs) were identified based on the EPA's list of HAPs (https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications).
[e] The emission factors are from Section 3.4, Table 3.4-3 of AP-42 (EPA, 1996).
[f] Diesel particulate matter (PM) and ammonia emissions were estimated from the criteria pollutant PM and NH_3 emissions, respectively.
[g] All Air Toxics, including DPM and speciated diesel exhaust pollutants, were conservatively summed for comparison to applicable regulatory thresholds.

Appendix 3.3-B, Table 11
Diesel Generators: Operation Emissions - GHGs
Lightspeed SJC02
November 2019

Heat Input [a]

Total Generator Diesel Use (PTE):	47,556	MMBtu/yr

Note:

[a] The only source of onsite GHGs is operation of the standby and administrative diesel generators. It was conservatively assumed that all 40 standby and 2 administrative generators could be operated concurrently. The heat input value is a sum of all generators, including forty 3-MW, one 1.25-MW, and one 0.5-MW generators.

GHG Emissions from Generator Operation

Pollutant	PTE Emissions (metric tons/year)
CO_2	3,517
CH_4	0.14
N_2O	0.03
CO_2 Equivalent (Total) [a]	3,529

Note:

[a] The following global warming potentials were used to estimate CO_2 equivalent emissions, per 40 CFR Part 98, Table A-1:

CH_4 =	25
N_2O =	298

GHG Emission Factors [a]

Pollutant	Generator Emission Factor (kg/MMBtu)
CO_2	73.96
CH_4	3.00E-03
N_2O	6.00E-04

Note:

[a] Emission factors from 40 CFR 98.33, Tables C-1 and C-2.

Appendix 3.3-B, Table 12
Offsite Vehicles: Operation Emissions - Criteria Pollutants and GHGs
Lightspeed SJC02
November 2019

Criteria Pollutant Emissions for Offsite Vehicle Operation

Emission Source	Number	Miles per Roundtrip [c]	Criteria Pollutant Emissions (lb/year) [d]					
			CO	VOC	SO_X	NO_X	PM_{10}	$PM_{2.5}$
Operation Worker Commute [a]	100	21.6	1,508.93	23.30	4.55	108.95	80.17	33.05
Material Deliveries [b]	30	14.6	191.24	38.06	3.86	1,100.65	59.93	33.48
		Total (lb/year)	**1,700.18**	**61.36**	**8.41**	**1,209.59**	**140.10**	**66.53**

Notes:
[a] Number of operational staff (daily) based on engineering estimates.
[b] Number of material deliveries (daily) based on engineering estimates.
[c] Roundtrip miles/day for Operation Worker Commute and Material Deliveries taken as the Urban, San Francisco Bay Area Air Basin H-W and C-NW values, respectively, from Table 4.2 of Appendix D of the *CalEEMod User's Guide* (BREEZE, 2017).
[d] Calculations assume that workers would be onsite: 365 days/year

GHG Emissions for Offsite Vehicle Operation

Emission Source	Number	Miles per Roundtrip [c]	GHG Emissions (metric tons/year) [d]			CO_2 Equivalent Emissions (metric tons/year) [e]
			CO_2	N_2O	CH_4	
Operation Worker Commute [a]	100	21.6	241.63	0.0144	0.0050	246.06
Material Deliveries [b, f]	30	14.6	211.04	0.0008	0.0008	211.29
		Total (metric tons/year)	**452.68**	**0.0152**	**0.0059**	**457.35**

Notes:
[a] Number of operational staff (daily) based on engineering estimates.
[b] Number of material deliveries (daily) based on engineering estimates.
[c] Roundtrip miles/day for Operation Worker Commute and Material Deliveries taken as the Urban, San Francisco Bay Area Air Basin H-W and C-NW values, respectively, from Table 4.2 of Appendix D of the *CalEEMod User's Guide* (BREEZE, 2017).
[d] Calculations assume that workers would be onsite: 365 days/year
[e] CO_2 equivalent emissions based on the following global warming potentials from 40 CFR 98, Table A-1:

CH_4: 25
N_2O: 298

[f] Idling CO_2 and CH_4 emissions are included for the material deliveries. Idling N_2O emissions were assumed negligible in the absence of an EMFAC-generated emission factor.

Appendix 3.3-B, Table 13
Equations Used to Calculate Criteria Pollutant and GHG Emissions for Offsite Vehicles
Lightspeed SJC02
November 2019

Emission Source	Pollutant(s)	Equation	Variables
Operation Worker Commute and Material Deliveries Vehicle Exhaust	CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$	E = N x VMT x D x EF / 453.6	E = Emissions (lb/year) N = Number of vehicles per day VMT = Vehicle miles traveled per roundtrip (miles/trip). Assumes one vehicle trip per day. D = Number of operational days per year EF = EMFAC2017 emission factor (g/mile) 453.6 = Conversion from g to lb
Material Deliveries Vehicle Idling	CO, VOC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$	E = N x D x I x EF / 453.6	E = Emissions (lb/year) N = Number of vehicles per day D = Number of operational days per year I = Idle time per vehicle per day (idle-hr) EF = EMFAC2017 emission factor (g/idle-hr) 453.6 = Conversion from g to lb
Operation Worker Commute and Material Deliveries Vehicle Exhaust	CO_2	E = N x VMT x D / FE x EF x 0.001	E = Emissions (metric tons/year) N = Number of vehicles per day VMT = Vehicle miles traveled per roundtrip (miles/trip). Assumes one vehicle trip per day. D = Number of operational days per year FE = Fuel economy (mpg) EF = Emission factor (kg/gallon) 0.001 = Conversion from kg to metric tons
	CH_4 and N_2O	E = N x VMT x D x EF / 1,000 x 0.001	E = Emissions (metric tons/year) N = Number of vehicles per day VMT = Vehicle miles traveled per roundtrip (miles/trip). Assumes one vehicle trip per day. D = Number of operational days per year EF = Emission factor (g/mile) 1,000 = Conversion from g to kg 0.001 = Conversion from kg to metric tons
Material Deliveries Vehicle Idling	CO_2 and CH_4	E = N x D x I x EF / 1,000 x 0.001	E = Emissions (metric tons/year) N = Number of vehicles per day D = Number of operational days per year I = Idle time per vehicle per day (idle-hr) EF = EMFAC2017 emission factor (g/idle-hr) 1,000 = Conversion from g to kg 0.001 = Conversion from kg to metric tons

Appendix 3.3-B, Table 14
Offsite Vehicles: Operation Emission Factors - Criteria Pollutants
Lightspeed SJC02
November 2019

Offsite Vehicle Criteria Pollutant Emission Factors for Operation

Vehicle Type	Vehicle Class [a]	Exhaust Emission Factors (g/mile) [b, c]						Fuel Economy (mpg) [d]
		CO	VOC	SO_X	NO_X	PM_{10} [e]	$PM_{2.5}$ [e]	
Operation Worker Commute	Light-duty Auto/Truck	0.868	0.013	0.003	0.063	0.046	0.019	28.64
Material Deliveries	Heavy/Medium-duty Diesel	0.398	0.099	0.011	2.846	0.169	0.094	7.77
Vehicle Type	**Vehicle Class [a]**	**Idling Emission Factors (g/idle-hr) [c]**						**Idle Time (idle-hrs/day) [f]**
		CO	VOC	SO_X	NO_X	PM_{10} [e]	$PM_{2.5}$ [e]	
Material Deliveries	Heavy/Medium-duty Diesel	25.387	1.652	0.061	48.438	0.113	0.108	0.083

Notes:

[a] The vehicle classes are represented as follows:

Light-duty Auto/Truck: 50% LDA Gas, 25% LDT1 Gas, and 25% LDT2 Gas values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017), and assuming workers typically drive gasoline-fueled vehicles.

Heavy/Medium-duty Diesel: 50% HHDT DSL and 50% MHDT DSL values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (BREEZE, 2017).

[b] Facility operations are projected to begin in October 2021, based on information provided. Therefore, 2021 emission factors were conservatively used.

[c] Exhaust and idling emission factors from EMFAC2017 for the Santa Clara County, calendar year 2021. A speed of 40 mph was assumed for offsite vehicles and worker commutes, which is consistent with the CalEEMod defaults. An average temperature of 62°F and humidity of 63% were used per Table B-1 of *CT-EMFAC: A Computer Model to Estimate Transportation Project Emissions* (UC Davis, 2007).

[d] Fuel economy from the EMFAC2017 Web Database (http://www.arb.ca.gov/emfac/2017/) for Santa Clara County, calendar year 2021, aggregated speed. Values were estimated by dividing the VMT (miles/day) by the Fuel Consumption (gal/day).

[e] Because of the small number of vehicles, it is assumed that the fugitive dust emissions from paved roads are negligible. As such, paved road emission factors are not included in these values.

[f] It is estimated that each material delivery vehicle idles for approximately 5 minutes each day.

Appendix 3.3-B, Table 15
Offsite Vehicles: Operation Emission Factors - GHGs
Lightspeed SJC02
November 2019

Offsite Vehicle GHG Emission Factors for Operation

Fuel / Vehicle Category Type	Emission Factor	Emission Factor Units	Emission Factor Source
CO_2 Emission Factors			
Gasoline	8.78	kg CO_2/gallon	The Climate Registry. 2019. 2019 Climate Registry Default Emission Factors. Table 2.1. May.
Diesel	10.21	kg CO_2/gallon	
N_2O Emission Factors			
Gasoline Passenger Car Model Year 2016 [a]	0.0183	g N2O/mile	The Climate Registry. 2019. 2019 Climate Registry Default Emission Factors. Table 2.5. May.
Diesel Medium and Heavy-duty Truck Model Year 1960 - 2015 [a]	0.0048	g N2O/mile	
CH_4 Emission Factors			
Gasoline Passenger Car Model Year 2016 [a]	0.0064	g CH_4/mile	The Climate Registry. 2019. 2019 Climate Registry Default Emission Factors. Table 2.5. May.
Diesel Medium and Heavy-duty Truck Model Year 1960 - 2015 [a]	0.0051	g CH_4/mile	

Note:
[a] Model Year 2016 was the most recent year of emission factors available. As a result, it was assumed representative of vehicles used for this project.

Offsite Vehicle GHG Idling Emission Factors for Operation

Vehicle Type	Vehicle Class [a]	Idling Emission Factors (g/idle-hr) [b]		Idle Time (idle-hrs/day) [c]
		CO_2	CH_4	
Material Deliveries	Heavy/Medium-duty Diesel	1,112.535	0.005	0.083

Notes:
[a] The Heavy/Medium-duty Diesel vehicle class is represented as 50% HHDT DSL and 50% MHDT DSL values, per Section 4.5 of Appendix A of the CalEEMod User's Guide (BREEZE, 2017).
[b] Idling emission factors from EMFAC2017 for Santa Clara County, calendar year 2021. An average temperature of 62°F and humidity of 63% were used per Table B-1 of CT-EMFAC: A Computer Model to Estimate Transportation Project Emissions (UC Davis, 2007).
[c] It is estimated that each material delivery vehicle idles for approximately 5 minutes each day.

Appendix 3.3-B, Table 16
Facility Upkeep: Operation Emissions - Criteria Pollutants and GHGs
Lightspeed SJC02
November 2019

Criteria Pollutant Emissions for Facility Upkeep

Emission Source	Criteria Pollutant Emissions (tpy) [d]					
	CO	VOC	SO_X	NO_X	PM_{10}	$PM_{2.5}$
Area [a]	0.00	2.77	0.00	0.00	0.00	0.00
Energy [b]	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Loading [c]	--	0.00	--	--	--	--
Waste [b]	0.00	0.00	0.00	0.00	0.00	0.00
Water [b]	0.00	0.00	0.00	0.00	0.00	0.00
Total (tpy)	**0.00**	**2.77**	**0.00**	**0.00**	**0.00**	**0.00**

Notes:
[a] The Area Category includes emissions from area coating, consumer product use, and landscaping.
[b] CalEEMod does not estimate criteria pollutant emissions from waste generation, water use, or electricity use, and the project will not use natural gas for comfort heating. As a result, there are no expected criteria pollutant emissions from the Energy, Waste, or Water Categories.
[c] Emissions released from the transfer of diesel fuel from the storage tank to the standby and administrative generators is estimated assuming 0.028 pounds of VOCs per 1,000 gallons for loading, storing, dispensing, and spills or leaks. This assumption is from the South Coast Air Quality Management Distric's (SCAQMD) *Supplemental Instructions for Liquid Organic Storage Tanks Annual Emissions Reporting Program* (SCAQMD, 2017).
[d] Emissions, except from fuel loading, were estimated using CalEEMod (v. 2016.3.2), based on the square footage of buildings to be constructed and paved areas, as detailed below.

GHG Emissions for Facility Upkeep

Emission Source	GHG Emissions (metric tons/year) [e]			
	CO_2	N_2O	CH_4	CO_2e Equivalent
Area [a]	0.01	0.00	0.00	0.01
Energy [b]	252,290.67	2.36	11.41	253,279.22
Refrigerant Usage [c, d]	--	--	--	55.15
Waste	122.11	0.00	7.22	302.52
Water	17.93	0.01	0.31	27.89
Total (metric tons/year)	**252,430.72**	**2.37**	**18.93**	**253,664.79**

Notes:
[a] The Area Category includes emissions from architectural coating, consumer product use, and landscaping.
[b] The Energy Category accounts for electricity use only, as the project will not use natural gas for comfort heating.
[c] Emissions from refrigerant use are from cooling units for the buildings onsite, as detailed below. The primary refrigerant used is R-410A, wich is a 1:1 mixture of HFC-125 and HFC-32. A maximum leak rate of 20% was assumed, per 40 CFR 82.157(c)(2)(i).
[d] Global Warming Potential (GWP) of R-410A calculated from the GWPs of HFC-125 and HFC-32, as provided in the Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report (IPCC, 2014):

Refrigerant	GWP
HFC-125	3,170
HFC-32	677
R-410A	1,923.5

[e] Emissions were estimated using CalEEMod (v. 2016.3.2), based on the square footage of buildings to be constructed, paved areas, site-specific electricity intensity, and site-specific water use, as detailed below.

Cooling Unit Details

Cooling Unit Type	Number of Units	Amount of R-410A per Unit (lbs)
14-Ton Cooling Unit	1	25.8
18-Ton Daikin Variable Refrigerant Flow Cooling Unit	5	51.6
4.5-Ton Variable Refrigerant Flow Cooling Unit	2	15.8
Total Refrigerant	**8**	**315.4**

Facility Upkeep: Operation Emissions - Criteria Pollutants and GHGs

Lightspeed SJC02

November 2019

Building and Paved Area Details [a]

Feature	Area (square feet)
Building 1 (SJC02)	244,482
Buildings 2 & 3 (SJC03)	240,222
Total Buildings	**484,704**
Parking Spaces	18,792
Handicap Parking Spaces	972
Motorcycle Parking Spaces	648
Bicycle Parking Spaces	5,670
Outdoor Equipment Areas	308,400
Substation Area	200,800
Total Paved Areas	**535,282**

Note:

[a] Data taken from the site plan.

Calculation of Electricity Intensity

Parameter	Value
Annual Electricity Use (kWh/yr) [a]	867,240,000
Building Area (square feet)	484,704
Electricity Intensity (kWh/sqft-yr)	**1,789.22**

Note:

[a] To provide maximum project flexibility, calculated as 99 MW x 8,760 hours per year of operation even though the project's electricity demand is expected to be closer to 91.75 MW.

Calculation of Water Use

Parameter	Value	Units
Annual Water Use [a]	29.1	acre-feet/year
	9,482,264	**gal/year**

Note:

[a] Based on the recycled water demand for indoor use. Exterior water use is expected to be negligible due to drought-resistant landscaping.

Lightspeed SJC02 - Facility Upkeep

San Francisco Bay Area Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	484.70	1000sqft	11.13	484,704.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project details reflective of Santa Clara County. PG&E will be the local utility provider.

Land Use - Square footage taken as building areas from site plan.

Construction Phase - Construction emissions calculated external to this model.

Trips and VMT - Construction vehicle trip emissions calculated external to this model.

Grading - Grading emissions calculated external to this model.

Architectural Coating - Architectural coating emissions during construction calculated external to this model.

Vehicle Trips - Operational vehicle trip emissions calculated external to this model.

Area Coating - Paved area square footage added for parking areas, outdoor equipment areas, and the substation area, as taken from the site plan.

Energy Use - Electricity energy intensity calculated as the total possible annual electricity use (99 MW) divided by the building square footage. No natural gas use expected.

Operational Off-Road Equipment - Operational off-road equipment emissions calculated external to this model.

Stationary Sources - Emergency Generators and Fire Pumps - Operational stationary source emissions calculated external to this model.

Water And Wastewater - Indoor water use based on engineering estimates of recycled water demand (29.1 acre-feet/year).

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	242,559.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	727,677.00	0.00
tblAreaCoating	Area_Parking	0	535282
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	LightingElect	3.08	0.00
tblEnergyUse	NT24E	3.70	1,789.22
tblEnergyUse	NT24NG	6.67	0.00
tblEnergyUse	T24E	1.48	0.00
tblEnergyUse	T24NG	19.71	0.00
tblTripsAndVMT	VendorTripNumber	80.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	204.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	41.00	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	112,184,000.00	9,482,264.00

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	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7657	4.0000e-005	4.4700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005			8.6600e-003	2.0000e-005	0.0000	9.2400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			252,290.6685	11.4079	2.3603	253,279.2183
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000			122.1092	7.2165	0.0000	302.5204
Water						0.0000	0.0000		0.0000	0.0000			17.9345	0.3097	7.4400e-003	27.8916
Total	**2.7657**	**4.0000e-005**	**4.4700e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**			**252,430.7209**	**18.9340**	**2.3677**	**253,609.6396**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7657	4.0000e-005	4.4700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005			8.6600e-003	2.0000e-005	0.0000	9.2400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			252,290.6685	11.4079	2.3603	253,279.2183
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000			122.1092	7.2165	0.0000	302.5204
Water						0.0000	0.0000		0.0000	0.0000			17.9345	0.3097	7.4400e-003	27.8916
Total	**2.7657**	**4.0000e-005**	**4.4700e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**			**252,430.7209**	**18.9340**	**2.3677**	**253,609.6396**

	ROG	NOx	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	4/1/2020	3/31/2020	5	0	
2	Site Preparation	Site Preparation	4/29/2020	4/28/2020	5	0	
3	Grading	Grading	5/13/2020	5/12/2020	5	0	
4	Building Construction	Building Construction	6/24/2020	6/23/2020	5	0	
5	Paving	Paving	8/18/2021	8/17/2021	5	0	
6	Architectural Coating	Architectural Coating	9/15/2021	9/14/2021	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

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	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	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	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**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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	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**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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**

3.3 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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	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 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	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

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**

3.6 Paving - 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	0.0000	0.0000	0.0000	0.0000	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	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**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	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	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**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000			252,290.6 685	11.4079	2.3603	253,279.2 183
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000			252,290.6 685	11.4079	2.3603	253,279.2 183
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000

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					
General Light Industry	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
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**

5.2 Energy by Land Use - NaturalGas

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					
General Light Industry	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
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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	8.67242e+008	252,290.6685	11.4079	2.3603	253,279.2183
Total		**252,290.6685**	**11.4079**	**2.3603**	**253,279.2183**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	8.67242e +008	252,290.6 685	11.4079	2.3603	253,279.2 183
Total		**252,290.6 685**	**11.4079**	**2.3603**	**253,279.2 183**

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	2.7657	4.0000e-005	4.4700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005			8.6600e-003	2.0000e-005	0.0000	9.2400e-003
Unmitigated	2.7657	4.0000e-005	4.4700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005			8.6600e-003	2.0000e-005	0.0000	9.2400e-003

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	0.8723					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8930					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	4.2000e-004	4.0000e-005	4.4700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005			8.6600e-003	2.0000e-005	0.0000	9.2400e-003
Total	**2.7657**	**4.0000e-005**	**4.4700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**			**8.6600e-003**	**2.0000e-005**	**0.0000**	**9.2400e-003**

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	0.8723					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8930					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	4.2000e-004	4.0000e-005	4.4700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005			8.6600e-003	2.0000e-005	0.0000	9.2400e-003
Total	**2.7657**	**4.0000e-005**	**4.4700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**			**8.6600e-003**	**2.0000e-005**	**0.0000**	**9.2400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.9345	0.3097	7.4400e-003	27.8916
Unmitigated	17.9345	0.3097	7.4400e-003	27.8916

7.2 Water by Land Use

Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
General Light Industry	9.48226 / 0	17.9345	0.3097	7.4400e-003	27.8916
Total		**17.9345**	**0.3097**	**7.4400e-003**	**27.8916**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	9.48226 / 0	17.9345	0.3097	7.4400e-003	27.8916
Total		**17.9345**	**0.3097**	**7.4400e-003**	**27.8916**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	122.1092	7.2165	0.0000	302.5204
Unmitigated	122.1092	7.2165	0.0000	302.5204

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	601.55	122.1092	7.2165	0.0000	302.5204
Total		**122.1092**	**7.2165**	**0.0000**	**302.5204**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	601.55	122.1092	7.2165	0.0000	302.5204
Total		**122.1092**	**7.2165**	**0.0000**	**302.5204**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix 3.3C
AQIA

Appendix 3.3-C, Table 1
Source Parameters for Operational AERMOD Modeling
Lightspeed SJC02
November 2019

Source ID	Stack Release Type	Source Description	Easting (X) (m) [a]	Northing (Y) (m) [a]	Base Elevation (m) [b]	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
G1	DEFAULT	Generator 1	594,531.29	4,143,050.77	5	9.14	716.48	24.18	0.76
G2	DEFAULT	Generator 2	594,544.30	4,143,008.22	5	9.14	716.48	24.18	0.76
G3	DEFAULT	Generator 3	594,552.95	4,142,979.91	5	9.14	716.48	24.18	0.76
G4	DEFAULT	Generator 4	594,565.97	4,142,937.36	5	9.14	716.48	24.18	0.76
G5	DEFAULT	Generator 5	594,574.62	4,142,909.05	5	9.14	716.48	24.18	0.76
G6	DEFAULT	Generator 6	594,587.63	4,142,866.49	5	9.14	716.48	24.18	0.76
G7	DEFAULT	Generator 7	594,596.28	4,142,838.19	5	9.14	716.48	24.18	0.76
G8	DEFAULT	Generator 8	594,609.29	4,142,795.63	5	9.14	716.48	24.18	0.76
G9	DEFAULT	Generator 9	594,617.95	4,142,767.33	5	9.14	716.48	24.18	0.76
G10	DEFAULT	Generator 10	594,630.96	4,142,724.77	5	9.14	716.48	24.18	0.76
G11	DEFAULT	Generator 11	594,604.98	4,143,074.41	5	9.14	716.48	24.18	0.76
G12	DEFAULT	Generator 12	594,617.99	4,143,031.86	5	9.14	716.48	24.18	0.76
G13	DEFAULT	Generator 13	594,626.64	4,143,003.55	5	9.14	716.48	24.18	0.76
G14	DEFAULT	Generator 14	594,639.65	4,142,961.00	5	9.14	716.48	24.18	0.76
G15	DEFAULT	Generator 15	594,648.31	4,142,932.69	5	9.14	716.48	24.18	0.76
G16	DEFAULT	Generator 16	594,661.32	4,142,890.13	5	9.14	716.48	24.18	0.76
G17	DEFAULT	Generator 17	594,669.97	4,142,861.83	5	9.14	716.48	24.18	0.76
G18	DEFAULT	Generator 18	594,682.98	4,142,819.27	5	9.14	716.48	24.18	0.76
G19	DEFAULT	Generator 19	594,691.64	4,142,790.96	5	9.14	716.48	24.18	0.76
G20	DEFAULT	Generator 20	594,704.65	4,142,748.41	5	9.14	716.48	24.18	0.76
G21	DEFAULT	Generator 21	594,660.77	4,142,627.51	5	9.14	716.48	24.18	0.76
G22	DEFAULT	Generator 22	594,673.78	4,142,584.96	5	9.14	716.48	24.18	0.76
G23	DEFAULT	Generator 23	594,682.43	4,142,556.65	5	9.14	716.48	24.18	0.76
G24	DEFAULT	Generator 24	594,695.44	4,142,514.10	5	9.14	716.48	24.18	0.76
G25	DEFAULT	Generator 25	594,704.10	4,142,485.79	5	9.14	716.48	24.18	0.76
G26	DEFAULT	Generator 26	594,717.11	4,142,443.23	5	9.14	716.48	24.18	0.76
G27	DEFAULT	Generator 27	594,725.76	4,142,414.93	5	9.14	716.48	24.18	0.76
G28	DEFAULT	Generator 28	594,738.77	4,142,372.37	5	9.14	716.48	24.18	0.76
G29	DEFAULT	Generator 29	594,734.56	4,142,651.07	5	9.14	716.48	24.18	0.76
G30	DEFAULT	Generator 30	594,747.57	4,142,608.52	5	9.14	716.48	24.18	0.76
G31	DEFAULT	Generator 31	594,756.23	4,142,580.21	5	9.14	716.48	24.18	0.76
G32	DEFAULT	Generator 32	594,769.24	4,142,537.65	5	9.14	716.48	24.18	0.76
G33	DEFAULT	Generator 33	594,777.89	4,142,509.35	5	9.14	716.48	24.18	0.76
G34	DEFAULT	Generator 34	594,790.90	4,142,466.79	5	9.14	716.48	24.18	0.76
G35	DEFAULT	Generator 35	594,799.56	4,142,438.49	5	9.14	716.48	24.18	0.76
G36	DEFAULT	Generator 36	594,812.57	4,142,395.93	5	9.14	716.48	24.18	0.76
G37	DEFAULT	Generator 37	594,838.26	4,142,451.33	5	9.14	716.48	24.18	0.76
G38	DEFAULT	Generator 38	594,851.27	4,142,408.78	5	9.14	716.48	24.18	0.76
G39	DEFAULT	Generator 39	594,912.05	4,142,474.09	5	9.14	716.48	24.18	0.76
G40	DEFAULT	Generator 40	594,925.06	4,142,431.53	5	9.14	716.48	24.18	0.76
G41	DEFAULT	Generator 41 - 1,250	594,510.40	4,143,105.30	5	6.10	727.59	24.26	0.51
G42	DEFAULT	Generator 42 - 500	594,644.73	4,142,682.41	5	6.10	752.04	16.36	0.36
G1_75	DEFAULT	Generator 1	594,531.29	4,143,050.77	5	9.14	652.04	20.38	0.76
G2_75	DEFAULT	Generator 2	594,544.30	4,143,008.22	5	9.14	652.04	20.38	0.76
G3_75	DEFAULT	Generator 3	594,552.95	4,142,979.91	5	9.14	652.04	20.38	0.76
G4_75	DEFAULT	Generator 4	594,565.97	4,142,937.36	5	9.14	652.04	20.38	0.76
G5_75	DEFAULT	Generator 5	594,574.62	4,142,909.05	5	9.14	652.04	20.38	0.76
G6_75	DEFAULT	Generator 6	594,587.63	4,142,866.49	5	9.14	652.04	20.38	0.76
G7_75	DEFAULT	Generator 7	594,596.28	4,142,838.19	5	9.14	652.04	20.38	0.76
G8_75	DEFAULT	Generator 8	594,609.29	4,142,795.63	5	9.14	652.04	20.38	0.76
G9_75	DEFAULT	Generator 9	594,617.95	4,142,767.33	5	9.14	652.04	20.38	0.76
G10_75	DEFAULT	Generator 10	594,630.96	4,142,724.77	5	9.14	652.04	20.38	0.76
G11_75	DEFAULT	Generator 11	594,604.98	4,143,074.41	5	9.14	652.04	20.38	0.76
G12_75	DEFAULT	Generator 12	594,617.99	4,143,031.86	5	9.14	652.04	20.38	0.76
G13_75	DEFAULT	Generator 13	594,626.64	4,143,003.55	5	9.14	652.04	20.38	0.76
G14_75	DEFAULT	Generator 14	594,639.65	4,142,961.00	5	9.14	652.04	20.38	0.76
G15_75	DEFAULT	Generator 15	594,648.31	4,142,932.69	5	9.14	652.04	20.38	0.76
G16_75	DEFAULT	Generator 16	594,661.32	4,142,890.13	5	9.14	652.04	20.38	0.76
G17_75	DEFAULT	Generator 17	594,669.97	4,142,861.83	5	9.14	652.04	20.38	0.76
G18_75	DEFAULT	Generator 18	594,682.98	4,142,819.27	5	9.14	652.04	20.38	0.76
G19_75	DEFAULT	Generator 19	594,691.64	4,142,790.96	5	9.14	652.04	20.38	0.76
G20_75	DEFAULT	Generator 20	594,704.65	4,142,748.41	5	9.14	652.04	20.38	0.76
G21_75	DEFAULT	Generator 21	594,660.77	4,142,627.51	5	9.14	652.04	20.38	0.76
G22_75	DEFAULT	Generator 22	594,673.78	4,142,584.96	5	9.14	652.04	20.38	0.76
G23_75	DEFAULT	Generator 23	594,682.43	4,142,556.65	5	9.14	652.04	20.38	0.76

Source Parameters for Operational AERMOD Modeling

Lightspeed SJC02

November 2019

G24_75	DEFAULT	Generator 24	594,695.44	4,142,514.10	5	9.14	652.04	20.38	0.76
G25_75	DEFAULT	Generator 25	594,704.10	4,142,485.79	5	9.14	652.04	20.38	0.76
G26_75	DEFAULT	Generator 26	594,717.11	4,142,443.23	5	9.14	652.04	20.38	0.76
G27_75	DEFAULT	Generator 27	594,725.76	4,142,414.93	5	9.14	652.04	20.38	0.76
G28_75	DEFAULT	Generator 28	594,738.77	4,142,372.37	5	9.14	652.04	20.38	0.76
G29_75	DEFAULT	Generator 29	594,734.56	4,142,651.07	5	9.14	652.04	20.38	0.76
G30_75	DEFAULT	Generator 30	594,747.57	4,142,608.52	5	9.14	652.04	20.38	0.76
G31_75	DEFAULT	Generator 31	594,756.23	4,142,580.21	5	9.14	652.04	20.38	0.76
G32_75	DEFAULT	Generator 32	594,769.24	4,142,537.65	5	9.14	652.04	20.38	0.76
G33_75	DEFAULT	Generator 33	594,777.89	4,142,509.35	5	9.14	652.04	20.38	0.76
G34_75	DEFAULT	Generator 34	594,790.90	4,142,466.79	5	9.14	652.04	20.38	0.76
G35_75	DEFAULT	Generator 35	594,799.56	4,142,438.49	5	9.14	652.04	20.38	0.76
G36_75	DEFAULT	Generator 36	594,812.57	4,142,395.93	5	9.14	652.04	20.38	0.76
G37_75	DEFAULT	Generator 37	594,838.26	4,142,451.33	5	9.14	652.04	20.38	0.76
G38_75	DEFAULT	Generator 38	594,851.27	4,142,408.78	5	9.14	652.04	20.38	0.76
G39_75	DEFAULT	Generator 39	594,912.05	4,142,474.09	5	9.14	652.04	20.38	0.76
G40_75	DEFAULT	Generator 40	594,925.06	4,142,431.53	5	9.14	652.04	20.38	0.76
G41_75	DEFAULT	Generator 41 - 1,250	594,510.40	4,143,105.30	5	6.10	705.37	21.54	0.51
G42_75	DEFAULT	Generator 42 - 500	594,644.73	4,142,682.41	5	6.10	728.71	13.17	0.36
G1_50	DEFAULT	Generator 1	594,531.29	4,143,050.77	5	9.14	627.59	16.58	0.76
G2_50	DEFAULT	Generator 2	594,544.30	4,143,008.22	5	9.14	627.59	16.58	0.76
G3_50	DEFAULT	Generator 3	594,552.95	4,142,979.91	5	9.14	627.59	16.58	0.76
G4_50	DEFAULT	Generator 4	594,565.97	4,142,937.36	5	9.14	627.59	16.58	0.76
G5_50	DEFAULT	Generator 5	594,574.62	4,142,909.05	5	9.14	627.59	16.58	0.76
G6_50	DEFAULT	Generator 6	594,587.63	4,142,866.49	5	9.14	627.59	16.58	0.76
G7_50	DEFAULT	Generator 7	594,596.28	4,142,838.19	5	9.14	627.59	16.58	0.76
G8_50	DEFAULT	Generator 8	594,609.29	4,142,795.63	5	9.14	627.59	16.58	0.76
G9_50	DEFAULT	Generator 9	594,617.95	4,142,767.33	5	9.14	627.59	16.58	0.76
G10_50	DEFAULT	Generator 10	594,630.96	4,142,724.77	5	9.14	627.59	16.58	0.76
G11_50	DEFAULT	Generator 11	594,604.98	4,143,074.41	5	9.14	627.59	16.58	0.76
G12_50	DEFAULT	Generator 12	594,617.99	4,143,031.86	5	9.14	627.59	16.58	0.76
G13_50	DEFAULT	Generator 13	594,626.64	4,143,003.55	5	9.14	627.59	16.58	0.76
G14_50	DEFAULT	Generator 14	594,639.65	4,142,961.00	5	9.14	627.59	16.58	0.76
G15_50	DEFAULT	Generator 15	594,648.31	4,142,932.69	5	9.14	627.59	16.58	0.76
G16_50	DEFAULT	Generator 16	594,661.32	4,142,890.13	5	9.14	627.59	16.58	0.76
G17_50	DEFAULT	Generator 17	594,669.97	4,142,861.83	5	9.14	627.59	16.58	0.76
G18_50	DEFAULT	Generator 18	594,682.98	4,142,819.27	5	9.14	627.59	16.58	0.76
G19_50	DEFAULT	Generator 19	594,691.64	4,142,790.96	5	9.14	627.59	16.58	0.76
G20_50	DEFAULT	Generator 20	594,704.65	4,142,748.41	5	9.14	627.59	16.58	0.76
G21_50	DEFAULT	Generator 21	594,660.77	4,142,627.51	5	9.14	627.59	16.58	0.76
G22_50	DEFAULT	Generator 22	594,673.78	4,142,584.96	5	9.14	627.59	16.58	0.76
G23_50	DEFAULT	Generator 23	594,682.43	4,142,556.65	5	9.14	627.59	16.58	0.76
G24_50	DEFAULT	Generator 24	594,695.44	4,142,514.10	5	9.14	627.59	16.58	0.76
G25_50	DEFAULT	Generator 25	594,704.10	4,142,485.79	5	9.14	627.59	16.58	0.76
G26_50	DEFAULT	Generator 26	594,717.11	4,142,443.23	5	9.14	627.59	16.58	0.76
G27_50	DEFAULT	Generator 27	594,725.76	4,142,414.93	5	9.14	627.59	16.58	0.76
G28_50	DEFAULT	Generator 28	594,738.77	4,142,372.37	5	9.14	627.59	16.58	0.76
G29_50	DEFAULT	Generator 29	594,734.56	4,142,651.07	5	9.14	627.59	16.58	0.76
G30_50	DEFAULT	Generator 30	594,747.57	4,142,608.52	5	9.14	627.59	16.58	0.76
G31_50	DEFAULT	Generator 31	594,756.23	4,142,580.21	5	9.14	627.59	16.58	0.76
G32_50	DEFAULT	Generator 32	594,769.24	4,142,537.65	5	9.14	627.59	16.58	0.76
G33_50	DEFAULT	Generator 33	594,777.89	4,142,509.35	5	9.14	627.59	16.58	0.76
G34_50	DEFAULT	Generator 34	594,790.90	4,142,466.79	5	9.14	627.59	16.58	0.76
G35_50	DEFAULT	Generator 35	594,799.56	4,142,438.49	5	9.14	627.59	16.58	0.76
G36_50	DEFAULT	Generator 36	594,812.57	4,142,395.93	5	9.14	627.59	16.58	0.76
G37_50	DEFAULT	Generator 37	594,838.26	4,142,451.33	5	9.14	627.59	16.58	0.76
G38_50	DEFAULT	Generator 38	594,851.27	4,142,408.78	5	9.14	627.59	16.58	0.76
G39_50	DEFAULT	Generator 39	594,912.05	4,142,474.09	5	9.14	627.59	16.58	0.76
G40_50	DEFAULT	Generator 40	594,925.06	4,142,431.53	5	9.14	627.59	16.58	0.76
G41_50	DEFAULT	Generator 41 - 1,250	594,510.40	4,143,105.30	5	6.10	691.48	16.86	0.51
G42_50	DEFAULT	Generator 42 - 500	594,644.73	4,142,682.41	5	6.10	715.37	10.67	0.36

Notes:

[a] Coordinates are in NAD83 UTM Projection, Zone 10.

[b] Base elevations were determined from a central point inside the facility fenceline.

Appendix 3.3-C, Table 2
Modeled Emission Rates
Lightspeed SJC02
November 2019

Source ID	Modeled Emission Rates (lb/hr)											
	NO_2		CO		$PM_{2.5}$		PM_{10}		SO_2			
	1-hour [a]	Annual [b]	1-hour [a]	8-hour [c]	24-hour [c]	Annual [b]	24-hour [c]	Annual [b]	1-hour [a]	3-hour [d]	24-hour [c]	Annual [b]
G1	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G2	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G3	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G4	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G5	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G6	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G7	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G8	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G9	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G10	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G11	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G12	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G13	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G14	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G15	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G16	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G17	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G18	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G19	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G20	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G21	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G22	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G23	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G24	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G25	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G26	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G27	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G28	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G29	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G30	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G31	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G32	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G33	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G34	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G35	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G36	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G37	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G38	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G39	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G40	41.59	0.20	4.96	2.48	3.48E-02	1.00E-03	3.48E-02	1.00E-03	4.27E-02	4.27E-02	7.12E-03	2.05E-04
G41	16.15	0.08	5.38	2.69	1.47E-02	4.23E-04	1.47E-02	4.23E-04	1.91E-02	1.91E-02	3.19E-03	9.18E-05
G42	7.40	0.04	0.72	0.36	5.91E-03	1.70E-04	5.91E-03	1.70E-04	7.28E-03	7.28E-03	1.21E-03	3.49E-05
G1_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G2_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G3_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G4_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G5_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G6_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G7_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G8_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G9_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G10_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G11_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G12_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G13_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G14_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G15_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G16_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G17_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G18_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G19_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G20_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G21_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G22_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G23_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G24_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G25_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G26_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G27_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G28_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G29_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G30_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G31_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G32_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G33_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G34_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G35_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G36_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G37_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G38_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G39_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G40_75	31.44	0.15	3.75	1.87	2.63E-02	7.57E-04	2.63E-02	7.57E-04	3.34E-02	3.34E-02	5.57E-03	1.60E-04
G41_75	12.28	0.06	4.09	2.04	1.12E-02	3.21E-04	1.12E-02	3.21E-04	1.52E-02	1.52E-02	2.53E-03	7.28E-05

Modeled Emission Rates
Lightspeed SJC02
November 2019

G42_75	5.61	0.03	0.55	0.27	4.48E-03	1.29E-04	4.48E-03	1.29E-04	5.44E-03	5.44E-03	9.06E-04	2.61E-05
G1_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G2_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G3_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G4_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G5_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G6_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G7_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G8_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G9_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G10_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G11_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G12_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G13_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G14_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G15_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G16_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G17_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G18_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G19_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G20_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G21_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G22_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G23_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G24_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G25_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G26_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G27_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G28_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G29_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G30_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G31_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G32_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G33_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G34_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G35_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G36_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G37_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G38_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G39_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G40_50	21.30	0.10	2.54	1.27	1.78E-02	5.13E-04	1.78E-02	5.13E-04	2.39E-02	2.39E-02	3.98E-03	1.15E-04
G41_50	8.40	0.04	2.80	1.40	7.64E-03	2.20E-04	7.64E-03	2.20E-04	1.11E-02	1.11E-02	1.84E-03	5.30E-05
G42_50	3.83	0.02	0.37	0.19	3.06E-03	8.79E-05	3.06E-03	8.79E-05	3.98E-03	3.98E-03	6.63E-04	1.91E-05

Notes:

[a] Maximum emission rate in any given hour.

[b] Averaged over a year (8,760 hours).

[c] Calculated to demonstrate that each generator will only operate a maximum of four hours within a 24-hour period.

[d] Assumed equal to the 1-hour maximum emission rate, based on the understanding that each generator could operate at the maximum 1-hour emission rate for 3 consecutive hours.

Appendix 3.3-C, Table 3
Detailed Model Results for 1-hour NO_2
Lightspeed SJC02
November 2019

Source ID	Modeled 1-hour NO_2 Concentration [a]	CAAQS	Exceeds the CAAQS?
	(µg/m^3)	(µg/m^3)	
G1	170.32	339	No
G2	205.76	339	No
G3	163.27	339	No
G4	252.63	339	No
G5	161.87	339	No
G6	191.98	339	No
G7	161.87	339	No
G8	243.98	339	No
G9	161.87	339	No
G10	162.97	339	No
G11	194.88	339	No
G12	182.44	339	No
G13	166.11	339	No
G14	162.56	339	No
G15	263.22	339	No
G16	167.53	339	No
G17	161.87	339	No
G18	167.66	339	No
G19	161.87	339	No
G20	166.39	339	No
G21	161.87	339	No
G22	176.42	339	No
G23	161.87	339	No
G24	243.94	339	No
G25	168.52	339	No
G26	174.93	339	No
G27	164.53	339	No
G28	225.20	339	No
G29	162.63	339	No
G30	162.38	339	No
G31	161.87	339	No
G32	161.87	339	No
G33	262.46	339	No
G34	171.87	339	No
G35	161.87	339	No
G36	167.09	339	No
G37	169.60	339	No
G38	166.24	339	No
G39	183.06	339	No
G40	174.30	339	No
G41	214.90	339	No
G42	210.88	339	No

Detailed Model Results for 1-hour NO_2
Lightspeed SJC02
November 2019

G1_75	173.26	339	No
G2_75	210.77	339	No
G3_75	163.64	339	No
G4_75	251.28	339	No
G5_75	161.87	339	No
G6_75	196.47	339	No
G7_75	162.08	339	No
G8_75	248.06	339	No
G9_75	161.87	339	No
G10_75	167.71	339	No
G11_75	192.25	339	No
G12_75	191.93	339	No
G13_75	166.29	339	No
G14_75	166.54	339	No
G15_75	261.98	339	No
G16_75	174.58	339	No
G17_75	164.20	339	No
G18_75	174.93	339	No
G19_75	162.30	339	No
G20_75	173.43	339	No
G21_75	162.16	339	No
G22_75	178.92	339	No
G23_75	161.87	339	No
G24_75	229.77	339	No
G25_75	163.09	339	No
G26_75	177.54	339	No
G27_75	165.77	339	No
G28_75	237.31	339	No
G29_75	162.64	339	No
G30_75	166.70	339	No
G31_75	161.87	339	No
G32_75	161.87	339	No
G33_75	244.22	339	No
G34_75	176.82	339	No
G35_75	161.87	339	No
G36_75	174.42	339	No
G37_75	171.48	339	No
G38_75	172.56	339	No
G39_75	185.42	339	No
G40_75	179.00	339	No
G41_75	204.81	339	No
G42_75	203.25	339	No
G1_50	178.13	339	No
G2_50	245.37	339	No
G3_50	162.97	339	No
G4_50	289.71	339	No
G5_50	161.87	339	No
G6_50	232.05	339	No
G7_50	201.21	339	No
G8_50	302.74	339	No
G9_50	161.87	339	No
G10_50	169.17	339	No
G11_50	191.15	339	No

Detailed Model Results for 1-hour NO_2

Lightspeed SJC02

November 2019

G12_50	199.62	339	No
G13_50	169.61	339	No
G14_50	167.13	339	No
G15_50	304.62	339	No
G16_50	178.73	339	No
G17_50	166.92	339	No
G18_50	175.81	339	No
G19_50	164.42	339	No
G20_50	174.00	339	No
G21_50	164.80	339	No
G22_50	198.55	339	No
G23_50	201.23	339	No
G24_50	261.63	339	No
G25_50	162.11	339	No
G26_50	196.75	339	No
G27_50	198.41	339	No
G28_50	273.35	339	No
G29_50	164.93	339	No
G30_50	168.87	339	No
G31_50	163.84	339	No
G32_50	162.36	339	No
G33_50	323.11	339	No
G34_50	201.34	339	No
G35_50	163.67	339	No
G36_50	175.52	339	No
G37_50	169.76	339	No
G38_50	202.28	339	No
G39_50	187.22	339	No
G40_50	203.58	339	No
G41_50	232.87	339	No
G42_50	192.33	339	No

Note:

[a] Modeled concentrations are the high-first-high results from each individual modeled year (2013-2017), or averaged over the five years, whichever concentration is greater.

Appendix 3.3-C, Table 4
Building and Tank Dimensions
Lightspeed SJC02
November 2019

Building Name	Description	Base Elevation [a] (m)	Tier Height (ft)	Corner 1 East (X) (m) [b]	Corner 1 North (Y) (m) [b]	Corner 2 East (X) (m) [b]	Corner 2 North (Y) (m) [b]	Corner 3 East (X) (m) [b]	Corner 3 North (Y) (m) [b]	Corner 4 East (X) (m) [b]	Corner 4 North (Y) (m) [b]
SJC02	SJC02 COLOS 1-5	5	25	594,529.83	4,143,089.51	594,585.21	4,143,106.44	594,699.99	4,142,731.01	594,644.61	4,142,714.08
SJC03_1	SJC03 COLOS 1-4	5	25	594,660.69	4,142,661.49	594,716.07	4,142,678.42	594,807.08	4,142,380.74	594,751.70	4,142,363.81
SJC03_2	SJC03 COLO 5	5	25	594,842.71	4,142,469.41	594,898.10	4,142,486.34	594,919.84	4,142,415.22	594,864.46	4,142,398.28
G1_ENC	SJC02 Enclosure Generator 1	5	16.38	594,528.73	4,143,052.38	594,532.52	4,143,053.54	594,536.93	4,143,039.11	594,533.14	4,143,037.95
G2_ENC	SJC02 Enclosure Generator 2	5	16.38	594,538.66	4,143,019.88	594,542.45	4,143,021.04	594,546.86	4,143,006.61	594,543.07	4,143,005.45
G3_ENC	SJC02 Enclosure Generator 3	5	16.38	594,550.40	4,142,981.52	594,554.19	4,142,982.68	594,558.60	4,142,968.25	594,554.81	4,142,967.09
G4_ENC	SJC02 Enclosure Generator 4	5	16.38	594,560.32	4,142,949.02	594,564.11	4,142,950.18	594,568.52	4,142,935.75	594,564.73	4,142,934.59
G5_ENC	SJC02 Enclosure Generator 5	5	16.38	594,572.06	4,142,910.66	594,575.85	4,142,911.82	594,580.26	4,142,897.39	594,576.47	4,142,896.23
G6_ENC	SJC02 Enclosure Generator 6	5	16.38	594,581.99	4,142,878.16	594,585.78	4,142,879.32	594,590.19	4,142,864.89	594,586.40	4,142,863.73
G7_ENC	SJC02 Enclosure Generator 7	5	16.38	594,593.73	4,142,839.80	594,597.52	4,142,840.95	594,601.93	4,142,826.53	594,598.14	4,142,825.37
G8_ENC	SJC02 Enclosure Generator 8	5	16.38	594,603.65	4,142,807.30	594,607.44	4,142,808.45	594,611.85	4,142,794.03	594,608.06	4,142,792.87
G9_ENC	SJC02 Enclosure Generator 9	5	16.38	594,615.39	4,142,768.93	594,619.18	4,142,770.09	594,623.59	4,142,755.66	594,619.80	4,142,754.50
G10_ENC	SJC02 Enclosure Generator 10	5	16.38	594,625.32	4,142,736.43	594,629.11	4,142,737.59	594,633.52	4,142,723.16	594,629.73	4,142,722.01
G11_ENC	SJC02 Enclosure Generator 11	5	16.38	594,602.42	4,143,076.02	594,606.21	4,143,077.18	594,610.62	4,143,062.75	594,606.83	4,143,061.59
G12_ENC	SJC02 Enclosure Generator 12	5	16.38	594,612.35	4,143,043.52	594,616.14	4,143,044.68	594,620.55	4,143,030.25	594,616.76	4,143,029.09
G13_ENC	SJC02 Enclosure Generator 13	5	16.38	594,624.09	4,143,005.16	594,627.88	4,143,006.32	594,632.29	4,142,991.89	594,628.50	4,142,990.73
G14_ENC	SJC02 Enclosure Generator 14	5	16.38	594,634.01	4,142,972.66	594,637.80	4,142,973.82	594,642.21	4,142,959.39	594,638.42	4,142,958.23
G15_ENC	SJC02 Enclosure Generator 15	5	16.38	594,645.75	4,142,934.30	594,649.54	4,142,935.45	594,653.95	4,142,921.03	594,650.16	4,142,919.87
G16_ENC	SJC02 Enclosure Generator 16	5	16.38	594,655.68	4,142,901.80	594,659.47	4,142,902.95	594,663.88	4,142,888.53	594,660.09	4,142,887.37
G17_ENC	SJC02 Enclosure Generator 17	5	16.38	594,667.42	4,142,863.43	594,671.21	4,142,864.59	594,675.62	4,142,850.16	594,671.83	4,142,849.01
G18_ENC	SJC02 Enclosure Generator 18	5	16.38	594,677.34	4,142,830.93	594,681.13	4,142,832.09	594,685.54	4,142,817.66	594,681.75	4,142,816.51
G19_ENC	SJC02 Enclosure Generator 19	5	16.38	594,689.08	4,142,792.57	594,692.87	4,142,793.73	594,697.28	4,142,779.30	594,693.49	4,142,778.14
G20_ENC	SJC02 Enclosure Generator 20	5	16.38	594,699.01	4,142,760.07	594,702.80	4,142,761.23	594,707.21	4,142,746.80	594,703.42	4,142,745.64
G21_ENC	SJC03 Enclosure Generator 21	5	16.38	594,658.21	4,142,629.12	594,662.00	4,142,630.28	594,666.41	4,142,615.85	594,662.62	4,142,614.69
G22_ENC	SJC03 Enclosure Generator 22	5	16.38	594,668.13	4,142,596.62	594,671.92	4,142,597.78	594,676.34	4,142,583.35	594,672.55	4,142,582.19
G23_ENC	SJC03 Enclosure Generator 23	5	16.38	594,679.87	4,142,558.26	594,683.66	4,142,559.42	594,688.07	4,142,544.99	594,684.29	4,142,543.83
G24_ENC	SJC03 Enclosure Generator 24	5	16.38	594,689.80	4,142,525.76	594,693.59	4,142,526.92	594,698.00	4,142,512.49	594,694.21	4,142,511.33
G25_ENC	SJC03 Enclosure Generator 25	5	16.38	594,701.54	4,142,487.40	594,705.33	4,142,488.56	594,709.74	4,142,474.13	594,705.95	4,142,472.97
G26_ENC	SJC03 Enclosure Generator 26	5	16.38	594,711.46	4,142,454.90	594,715.25	4,142,456.06	594,719.66	4,142,441.63	594,715.88	4,142,440.47
G27_ENC	SJC03 Enclosure Generator 27	5	16.38	594,723.20	4,142,416.53	594,726.99	4,142,417.69	594,731.40	4,142,403.26	594,727.61	4,142,402.11
G28_ENC	SJC03 Enclosure Generator 28	5	16.38	594,733.13	4,142,384.03	594,736.92	4,142,385.19	594,741.33	4,142,370.77	594,737.54	4,142,369.61
G29_ENC	SJC03 Enclosure Generator 29	5	16.38	594,732.01	4,142,652.68	594,735.80	4,142,653.84	594,740.21	4,142,639.41	594,736.42	4,142,638.25
G30_ENC	SJC03 Enclosure Generator 30	5	16.38	594,741.93	4,142,620.18	594,745.72	4,142,621.34	594,750.13	4,142,606.91	594,746.34	4,142,605.75
G31_ENC	SJC03 Enclosure Generator 31	5	16.38	594,753.67	4,142,581.82	594,757.46	4,142,582.98	594,761.87	4,142,568.55	594,758.08	4,142,567.39
G32_ENC	SJC03 Enclosure Generator 32	5	16.38	594,763.60	4,142,549.32	594,767.39	4,142,550.48	594,771.80	4,142,536.05	594,768.01	4,142,534.89
G33_ENC	SJC03 Enclosure Generator 33	5	16.38	594,775.34	4,142,510.96	594,779.12	4,142,512.11	594,783.54	4,142,497.69	594,779.75	4,142,496.53
G34_ENC	SJC03 Enclosure Generator 34	5	16.38	594,785.26	4,142,478.46	594,789.05	4,142,479.61	594,793.46	4,142,465.19	594,789.67	4,142,464.03
G35_ENC	SJC03 Enclosure Generator 35	5	16.38	594,797.00	4,142,440.09	594,800.79	4,142,441.25	594,805.20	4,142,426.82	594,801.41	4,142,425.66
G36_ENC	SJC03 Enclosure Generator 36	5	16.38	594,806.93	4,142,407.59	594,810.72	4,142,408.75	594,815.13	4,142,394.32	594,811.34	4,142,393.17
G37_ENC	SJC03 Enclosure Generator 37	5	16.38	594,835.70	4,142,452.94	594,839.49	4,142,454.10	594,843.90	4,142,439.67	594,840.11	4,142,438.51
G38_ENC	SJC03 Enclosure Generator 38	5	16.38	594,845.63	4,142,420.44	594,849.42	4,142,421.60	594,853.83	4,142,407.17	594,850.04	4,142,406.01
G39_ENC	SJC03 Enclosure Generator 39	5	16.38	594,909.49	4,142,475.70	594,913.28	4,142,476.86	594,917.69	4,142,462.43	594,913.90	4,142,461.27
G40_ENC	SJC03 Enclosure Generator 40	5	16.38	594,919.42	4,142,443.20	594,923.21	4,142,444.36	594,927.62	4,142,429.93	594,923.83	4,142,428.77
G41_ENC	Large Admin Gen Enclosure	5	15.44	594,508.66	4,143,105.97	594,512.29	4,143,107.08	594,515.74	4,143,095.79	594,512.11	4,143,094.68
G42_ENC	Small Admin Gen Enclosure	5	12.58	594,642.92	4,142,683.08	594,646.70	4,142,684.24	594,649.30	4,142,675.74	594,645.51	4,142,674.58
CT_1	Cooling Unit Building 1	5	30.6	594,524.43	4,143,063.29	594,530.35	4,143,065.10	594,533.20	4,143,055.77	594,527.28	4,143,053.96
CT_2	Cooling Unit Building 2	5	30.6	594,542.48	4,143,003.52	594,548.40	4,143,005.33	594,551.25	4,142,996.00	594,545.33	4,142,994.19
CT_3	Cooling Unit Building 3	5	30.6	594,546.09	4,142,992.43	594,552.01	4,142,994.24	594,554.87	4,142,984.91	594,548.95	4,142,983.10
CT_4	Cooling Unit Building 4	5	30.6	594,567.76	4,142,921.56	594,573.68	4,142,923.37	594,576.53	4,142,914.05	594,570.61	4,142,912.24
CT_5	Cooling Unit Building 5	5	30.6	594,585.81	4,142,861.80	594,591.73	4,142,863.61	594,594.58	4,142,854.28	594,588.66	4,142,852.47
CT_6	Cooling Unit Building 6	5	30.6	594,589.42	4,142,850.70	594,595.34	4,142,852.51	594,598.20	4,142,843.19	594,592.28	4,142,841.38
CT_7	Cooling Unit Building 7	5	30.6	594,611.09	4,142,779.84	594,617.01	4,142,781.65	594,619.86	4,142,772.32	594,613.94	4,142,770.51
CT_8	Cooling Unit Building 8	5	30.6	594,629.14	4,142,720.07	594,635.06	4,142,721.88	594,637.91	4,142,712.55	594,631.99	4,142,710.74
CT_9	Cooling Unit Building 9	5	30.6	594,598.12	4,143,086.93	594,604.04	4,143,088.74	594,606.89	4,143,079.41	594,600.97	4,143,077.60
CT_10	Cooling Unit Building 10	5	30.6	594,616.17	4,143,027.16	594,622.09	4,143,028.97	594,624.94	4,143,019.64	594,619.02	4,143,017.83
CT_11	Cooling Unit Building 11	5	30.6	594,619.78	4,143,016.07	594,625.70	4,143,017.88	594,628.56	4,143,008.55	594,622.64	4,143,006.74
CT_12	Cooling Unit Building 12	5	30.6	594,637.84	4,142,956.30	594,643.76	4,142,958.11	594,646.61	4,142,948.78	594,640.69	4,142,946.97
CT_13	Cooling Unit Building 13	5	30.6	594,659.50	4,142,885.43	594,665.42	4,142,887.24	594,668.27	4,142,877.92	594,662.35	4,142,876.11
CT_14	Cooling Unit Building 14	5	30.6	594,663.11	4,142,874.34	594,669.03	4,142,876.15	594,671.88	4,142,866.82	594,665.96	4,142,865.01
CT_15	Cooling Unit Building 15	5	30.6	594,681.17	4,142,814.57	594,687.09	4,142,816.38	594,689.94	4,142,807.06	594,684.02	4,142,805.25
CT_16	Cooling Unit Building 16	5	30.6	594,684.78	4,142,803.48	594,690.70	4,142,805.29	594,693.55	4,142,795.96	594,687.63	4,142,794.15
CT_17	Cooling Unit Building 17	5	30.6	594,702.83	4,142,743.71	594,708.75	4,142,745.52	594,711.60	4,142,736.19	594,705.68	4,142,734.38
CT_18	Cooling Unit Building 18	5	30.6	594,653.91	4,142,640.03	594,659.83	4,142,641.84	594,662.68	4,142,632.51	594,656.76	4,142,630.70
CT_19	Cooling Unit Building 19	5	30.6	594,671.96	4,142,580.26	594,677.88	4,142,582.07	594,680.73	4,142,572.74	594,674.81	4,142,570.93
CT_20	Cooling Unit Building 20	5	30.6	594,675.57	4,142,569.17	594,681.49	4,142,570.98	594,684.34	4,142,561.65	594,678.42	4,142,559.84
CT_21	Cooling Unit Building 21	5	30.6	594,697.24	4,142,498.30	594,703.16	4,142,500.11	594,706.01	4,142,490.79	594,700.09	4,142,488.98
CT_22	Cooling Unit Building 22	5	30.6	594,715.29	4,142,438.54	594,721.21	4,142,440.35	594,724.06	4,142,431.02	594,718.14	4,142,429.21
CT_23	Cooling Unit Building 23	5	30.6	594,718.90	4,142,427.44	594,724.82	4,142,429.25	594,727.67	4,142,419.92	594,721.75	4,142,418.11
CT_24	Cooling Unit Building 24	5	30.6	594,727.70	4,142,663.59	594,733.62	4,142,665.40	594,736.47	4,142,656.07	594,730.55	4,142,654.26
CT_25	Cooling Unit Building 25	5	30.6	594,745.76	4,142,603.82	594,751.68	4,142,605.63	594,754.53	4,142,596.30	594,748.61	4,142,594.49
CT_26	Cooling Unit Building 26	5	30.6	594,749.37	4,142,592.72	594,755.29	4,142,594.53	594,758.14	4,142,585.21	594,752.22	4,142,583.40
CT_27	Cooling Unit Building 27	5	30.6	594,767.42	4,142,532.96	594,773.34	4,142,534.77	594,776.19	4,142,525.44	594,770.27	4,142,523.63
CT_28	Cooling Unit Building 28	5	30.6	594,789.09	4,142,462.09	594,795.01	4,142,463.90	594,797.86	4,142,454.58	594,791.94	4,142,452.77
CT_29	Cooling Unit Building 29	5	30.6	594,792.70	4,142,451.00	594,798.62	4,142,452.81	594,801.47	4,142,443.48	594,795.55	4,142,441.67
CT_30	Cooling Unit Building 30	5	30.6	594,810.75	4,142,391.23	594,816.67	4,142,393.04	594,819.52	4,142,383.71	594,813.60	4,142,381.90
CT_31	Cooling Unit Building 31	5	30.6	594,831.40	4,142,463.85	594,837.32	4,142,465.66	594,840.17	4,142,456.33	594,834.25	4,142,454.52
CT_32	Cooling Unit Building 32	5	30.6	594,849.45	4,142,404.08	594,855.37	4,142,405.89	594,858.23	4,142,396.56	594,852.31	4,142,394.75
CT_33	Cooling Unit Building 33	5	30.6	594,905.19	4,142,486.61	594,911.11	4,142,488.41	594,913.96	4,142,479.09	594,908.04	4,142,477.28
CT_34	Cooling Unit Building 34	5	30.6	594,923.24	4,142,426.84	594,929.16	4,142,428.65	594,932.01	4,142,419.32	594,926.09	4,142,417.51

Notes:
[a] Base elevations were determined from a central point inside the facility fenceline.
[b] Coordinates are provided in NAD83 UTM Projection, Zone 10.

Appendix 3.3-C, Table 5

Seasonal-Hour NO_2 Background Data

Lightspeed SJC02

November 2019

Hour of Day	NAAQS Background Concentration by Season (ppb) [a, b]			
	Dec-Feb	Mar-May	June-Aug	Sept-Nov
Hr.1	32.30	27.17	16.73	44.10
Hr.2	30.67	25.80	16.20	38.70
Hr.3 [d]	27.23	23.75	17.17	34.68
Hr.4 [d]	27.23	23.75	17.17	34.68
Hr.5	23.80	21.70	18.13	30.67
Hr.6	25.87	27.40	20.47	36.20
Hr.7	30.17	30.10	21.90	38.47
Hr.8	33.37	31.30	24.43	39.93
Hr.9	37.23	30.80	24.47	45.20
Hr.10	38.97	29.60	24.70	43.53
Hr.11	38.00	25.67	21.97	39.23
Hr.12	37.73	21.90	19.87	38.27
Hr.13	34.93	18.07	15.93	37.23
Hr.14	34.40	13.93	13.33	35.80
Hr.15	35.67	11.33	10.93	36.03
Hr.16	31.40	10.50	10.83	33.70
Hr.17	32.87	11.10	10.10	35.30
Hr.18	41.33	13.90	10.83	45.77
Hr.19	43.83	18.93	13.90	55.23
Hr.20	45.40	20.87	16.23	61.93
Hr.21	44.47	23.50	15.43	61.10
Hr.22	41.87	31.33	17.77	55.03
Hr.23	38.07	31.27	18.17	51.30
Hr.24	35.13	29.93	19.53	48.53

Hour of Day	CAAQS Background Concentration by Season (ppb) [a, c]			
	Dec-Feb	Mar-May	June-Aug	Sept-Nov
Hr.1	34.30	30.10	27.30	56.90
Hr.2	32.70	28.00	27.30	53.50
Hr.3 [d]	30.40	26.55	23.30	47.70
Hr.4 [d]	30.40	26.55	23.30	47.70
Hr.5	28.10	25.10	19.30	41.90
Hr.6	27.80	29.50	24.10	42.90
Hr.7	31.80	39.00	24.50	41.70
Hr.8	35.10	34.50	30.20	46.80
Hr.9	40.30	33.00	28.80	52.70
Hr.10	46.90	33.90	26.80	55.60
Hr.11	41.80	32.10	34.80	49.40
Hr.12	43.50	33.70	27.00	50.70
Hr.13	43.10	24.20	21.30	59.30
Hr.14	41.70	17.70	19.70	60.70
Hr.15	45.70	16.80	16.40	53.50
Hr.16	37.50	17.10	16.20	51.70
Hr.17	39.30	20.50	15.80	58.00
Hr.18	47.20	18.70	13.30	74.10
Hr.19	52.20	25.80	15.80	82.90
Hr.20	51.10	40.60	24.40	86.10
Hr.21	49.50	34.30	38.20	82.10
Hr.22	49.30	43.90	38.00	73.60
Hr.23	41.30	36.00	48.70	66.00
Hr.24	38.50	34.00	46.70	60.80

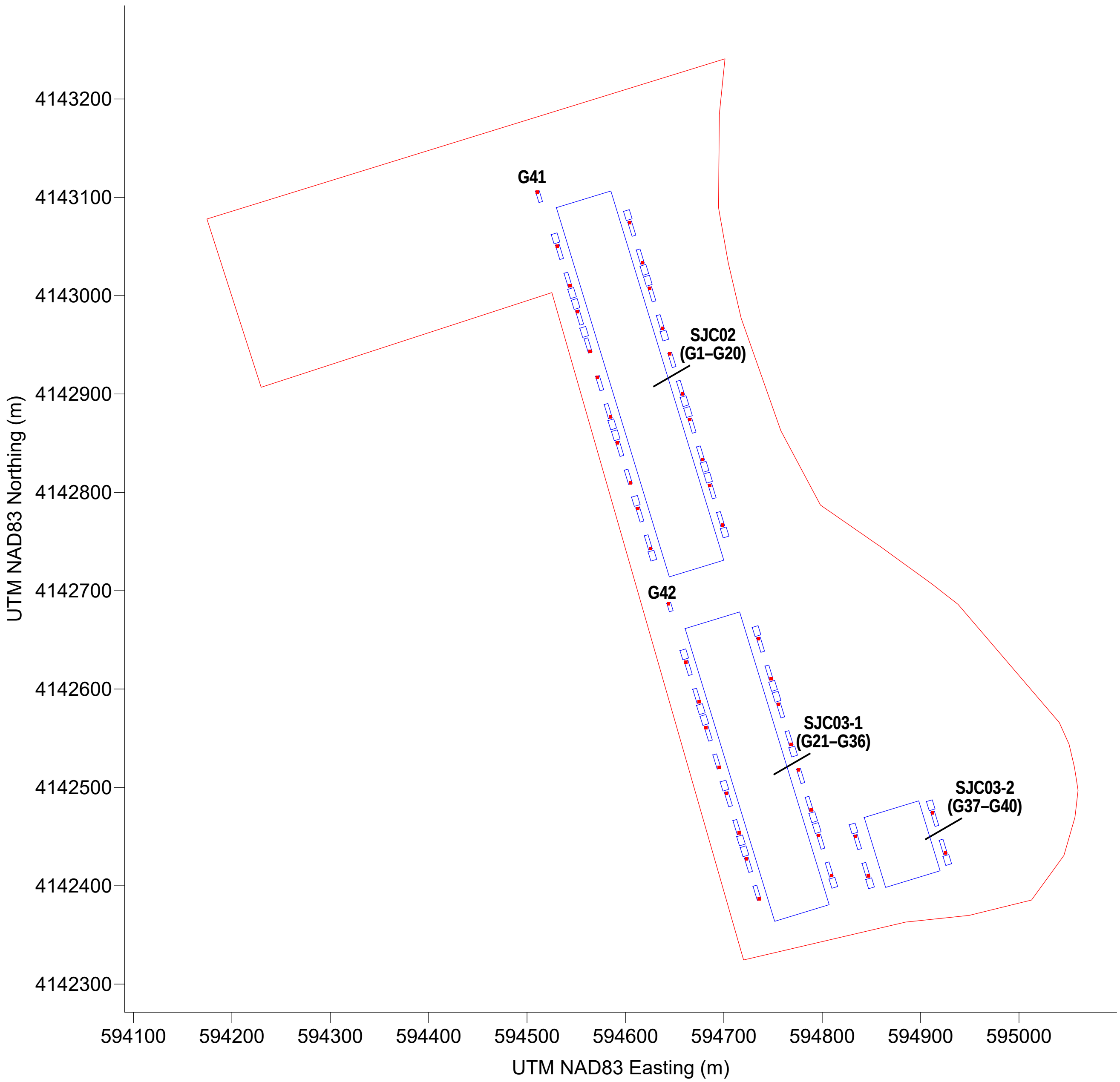
Notes:

[a] Backgroud concentrations by Season and Hour of Day obtained from the EPA Air Quality System station in San Jose, California (Site ID 060850005).

[b] Background concentrations used for comparison to the NAAQS are the high-2nd-high hourly values averaged across the three most recent and complete years of data, to represent the 98th percentile.

[c] Background concentrations used for comparison to the CAAQS are the high-1st-high hourly values averaged across the three most recent and complete years of data.

[d] Hours 3 and 4 are when monitor self calibrations or other activities occur, such that data points are not available. Therefore, both hours reflect the average of the hour before and after (Hours 2 and 5).

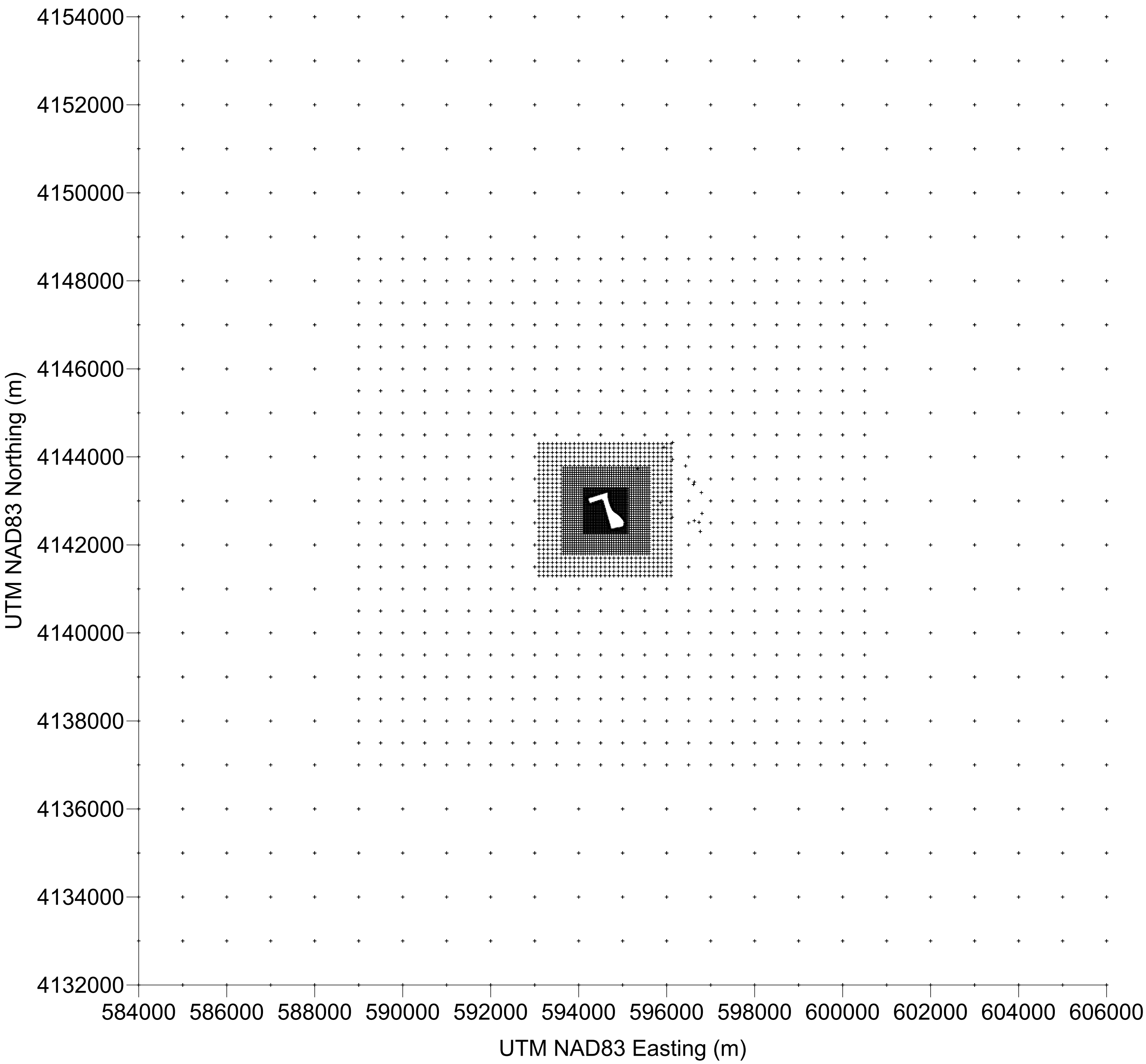


LEGEND

- Buildings, Generator Enclosures, and Cooling Unit Structures
- Facility Fenceline
- Point Sources

Appendix 3.3-C, Figure 1
Facility Layout
Lightspeed SJC02
San Jose, California

EC0821191740SAC App3.3-C_Fig1_SJC02_FacilityLayout_rev1



Appendix 3.3-C, Figure 2
Receptor Grid
Lightspeed SJC02
San Jose, California

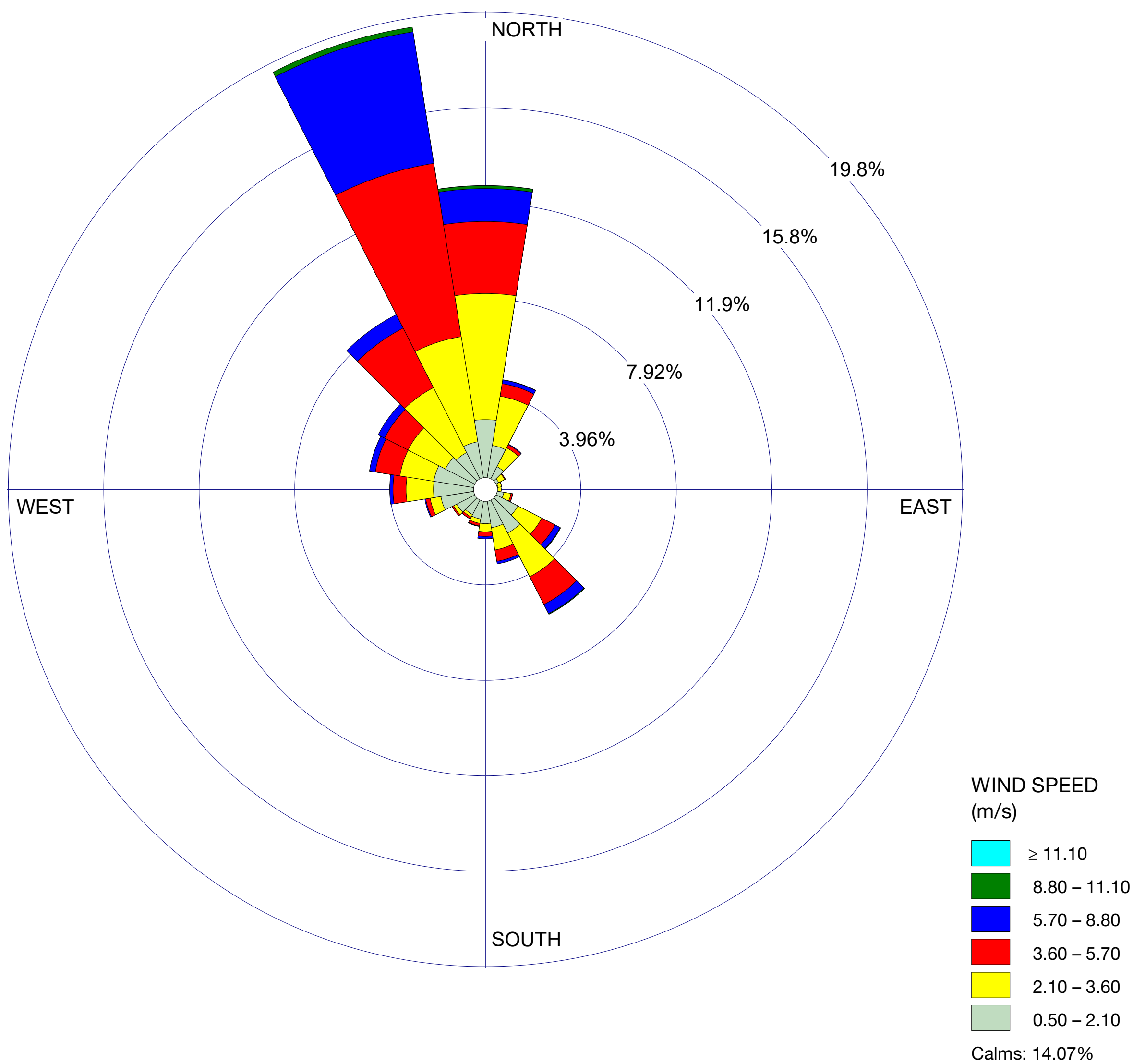
EC0821191740SAC App3.3-C_Fig2_SJC02_ReceptorGrid

WIND ROSE PLOT:

Moffett Field (KNUQ)
Station #23244

DISPLAY:

Wind Speed
Direction (blowing from)



DATA PERIOD:

Start Date: 1/1/2013 - 00:00
End Date: 12/31/2017 - 23:59

CALM WINDS:

14.07%

TOTAL COUNT:

43675 hrs.

AVG. WIND SPEED:

2.75 m/s

DATE:

9/6/2019

Appendix 3.3-C, Figure 3
Wind Speed
Lightspeed SJC02
San Jose, California

EC0821191740SAC App3.3-C_Fig3_SJC02_WindSpeed

Appendix 3.3D
Construction HRA

Appendix 3.3-D, Table 1
Demolition and Construction HRA Emission Rates
Lightspeed SJC02
November 2019

Emission Rates for HRA Modeling of Demolition and Construction DPM Emissions

Source Grouping	**Diesel Particulate Matter**	
	(g/s)	**(lb/yr average)** [b]
Demolition and Construction Total	0.006	426
Demolition/Construction Point (per source) [a]	0.00001	0.98

Notes:

[a] Modeled emissions only include onsite and offsite exhaust from equipment and offroad vehicles, assuming PM_{10} is representative of diesel particulate matter (DPM).

[b] Number of point sources modeled: 437

Appendix 3.3-D, Table 2
AERMOD Source Inputs for Demolition and Construction HRA
Lightspeed SJC02
November 2019

Source ID	Stack Release Type	Easting (X) [a] (m)	Northing (Y) [a] (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	DPM Emission Rate [b] (g/s)
CPS_01	HORIZONTAL	594,724.27	4,142,350.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_02	HORIZONTAL	594,749.27	4,142,350.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_03	HORIZONTAL	594,774.27	4,142,350.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_04	HORIZONTAL	594,799.01	4,142,352.84	7.00	4.6	533	18	0.127	1.403E-05
CPS_05	HORIZONTAL	594,822.90	4,142,356.75	7.00	4.6	533	18	0.127	1.403E-05
CPS_06	HORIZONTAL	594,724.27	4,142,375.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_07	HORIZONTAL	594,749.27	4,142,375.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_08	HORIZONTAL	594,774.27	4,142,375.70	6.47	4.6	533	18	0.127	1.403E-05
CPS_09	HORIZONTAL	594,799.27	4,142,375.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_10	HORIZONTAL	594,824.27	4,142,375.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_11	HORIZONTAL	594,849.27	4,142,375.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_12	HORIZONTAL	594,874.27	4,142,375.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_13	HORIZONTAL	594,899.27	4,142,375.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_14	HORIZONTAL	594,924.95	4,142,378.40	7.00	4.6	533	18	0.127	1.403E-05
CPS_15	HORIZONTAL	594,953.30	4,142,379.79	6.16	4.6	533	18	0.127	1.403E-05
CPS_16	HORIZONTAL	594,724.27	4,142,400.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_17	HORIZONTAL	594,749.27	4,142,400.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_18	HORIZONTAL	594,774.27	4,142,400.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_19	HORIZONTAL	594,799.27	4,142,400.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_20	HORIZONTAL	594,824.27	4,142,400.70	6.53	4.6	533	18	0.127	1.403E-05
CPS_21	HORIZONTAL	594,849.27	4,142,400.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_22	HORIZONTAL	594,874.27	4,142,400.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_23	HORIZONTAL	594,899.27	4,142,400.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_24	HORIZONTAL	594,924.27	4,142,400.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_25	HORIZONTAL	594,949.27	4,142,400.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_26	HORIZONTAL	594,974.27	4,142,400.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_27	HORIZONTAL	594,999.27	4,142,400.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_28	HORIZONTAL	594,713.04	4,142,425.34	6.00	4.6	533	18	0.127	1.403E-05
CPS_29	HORIZONTAL	594,749.27	4,142,425.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_30	HORIZONTAL	594,774.27	4,142,425.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_31	HORIZONTAL	594,799.27	4,142,425.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_32	HORIZONTAL	594,824.27	4,142,425.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_33	HORIZONTAL	594,849.27	4,142,425.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_34	HORIZONTAL	594,874.27	4,142,425.70	6.20	4.6	533	18	0.127	1.403E-05
CPS_35	HORIZONTAL	594,899.27	4,142,425.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_36	HORIZONTAL	594,924.27	4,142,425.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_37	HORIZONTAL	594,949.27	4,142,425.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_38	HORIZONTAL	594,974.27	4,142,425.70	7.00	4.6	533	18	0.127	1.403E-05
CPS_39	HORIZONTAL	594,999.27	4,142,425.70	6.29	4.6	533	18	0.127	1.403E-05
CPS_40	HORIZONTAL	595,024.27	4,142,425.70	6.11	4.6	533	18	0.127	1.403E-05
CPS_41	HORIZONTAL	594,699.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_42	HORIZONTAL	594,724.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_43	HORIZONTAL	594,749.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_44	HORIZONTAL	594,774.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_45	HORIZONTAL	594,799.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_46	HORIZONTAL	594,824.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_47	HORIZONTAL	594,849.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_48	HORIZONTAL	594,874.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_49	HORIZONTAL	594,899.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_50	HORIZONTAL	594,924.27	4,142,450.70	6.62	4.6	533	18	0.127	1.403E-05
CPS_51	HORIZONTAL	594,949.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_52	HORIZONTAL	594,974.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_53	HORIZONTAL	594,999.27	4,142,450.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_54	HORIZONTAL	595,024.27	4,142,450.70	5.28	4.6	533	18	0.127	1.403E-05
CPS_55	HORIZONTAL	595,043.66	4,142,455.07	5.00	4.6	533	18	0.127	1.403E-05
CPS_56	HORIZONTAL	594,699.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_57	HORIZONTAL	594,724.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_58	HORIZONTAL	594,749.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_59	HORIZONTAL	594,774.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_60	HORIZONTAL	594,799.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_61	HORIZONTAL	594,824.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_62	HORIZONTAL	594,849.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_63	HORIZONTAL	594,874.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_64	HORIZONTAL	594,899.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_65	HORIZONTAL	594,924.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_66	HORIZONTAL	594,949.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_67	HORIZONTAL	594,974.27	4,142,475.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_68	HORIZONTAL	594,999.27	4,142,475.70	5.01	4.6	533	18	0.127	1.403E-05

AERMOD Source Inputs for Demolition and Construction HRA
Lightspeed SJC02
November 2019

CPS_69	HORIZONTAL	595,024.27	4,142,475.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_70	HORIZONTAL	595,049.27	4,142,475.70	4.01	4.6	533	18	0.127	1.403E-05
CPS_71	HORIZONTAL	594,694.91	4,142,500.62	6.00	4.6	533	18	0.127	1.403E-05
CPS_72	HORIZONTAL	594,724.27	4,142,500.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_73	HORIZONTAL	594,749.27	4,142,500.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_74	HORIZONTAL	594,774.27	4,142,500.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_75	HORIZONTAL	594,799.27	4,142,500.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_76	HORIZONTAL	594,824.27	4,142,500.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_77	HORIZONTAL	594,849.27	4,142,500.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_78	HORIZONTAL	594,874.27	4,142,500.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_79	HORIZONTAL	594,899.27	4,142,500.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_80	HORIZONTAL	594,924.27	4,142,500.70	5.95	4.6	533	18	0.127	1.403E-05
CPS_81	HORIZONTAL	594,949.27	4,142,500.70	5.39	4.6	533	18	0.127	1.403E-05
CPS_82	HORIZONTAL	594,974.27	4,142,500.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_83	HORIZONTAL	594,999.27	4,142,500.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_84	HORIZONTAL	595,024.27	4,142,500.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_85	HORIZONTAL	595,049.27	4,142,500.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_86	HORIZONTAL	594,674.27	4,142,525.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_87	HORIZONTAL	594,699.27	4,142,525.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_88	HORIZONTAL	594,724.27	4,142,525.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_89	HORIZONTAL	594,749.27	4,142,525.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_90	HORIZONTAL	594,774.27	4,142,525.70	5.91	4.6	533	18	0.127	1.403E-05
CPS_91	HORIZONTAL	594,799.27	4,142,525.70	5.77	4.6	533	18	0.127	1.403E-05
CPS_92	HORIZONTAL	594,824.27	4,142,525.70	5.77	4.6	533	18	0.127	1.403E-05
CPS_93	HORIZONTAL	594,849.27	4,142,525.70	5.77	4.6	533	18	0.127	1.403E-05
CPS_94	HORIZONTAL	594,874.27	4,142,525.70	5.77	4.6	533	18	0.127	1.403E-05
CPS_95	HORIZONTAL	594,899.27	4,142,525.70	5.41	4.6	533	18	0.127	1.403E-05
CPS_96	HORIZONTAL	594,924.27	4,142,525.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_97	HORIZONTAL	594,949.27	4,142,525.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_98	HORIZONTAL	594,974.27	4,142,525.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_99	HORIZONTAL	594,999.27	4,142,525.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_100	HORIZONTAL	595,024.27	4,142,525.70	4.45	4.6	533	18	0.127	1.403E-05
CPS_101	HORIZONTAL	595,044.85	4,142,533.15	4.00	4.6	533	18	0.127	1.403E-05
CPS_102	HORIZONTAL	594,674.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_103	HORIZONTAL	594,699.27	4,142,550.70	5.61	4.6	533	18	0.127	1.403E-05
CPS_104	HORIZONTAL	594,724.27	4,142,550.70	6.00	4.6	533	18	0.127	1.403E-05
CPS_105	HORIZONTAL	594,749.27	4,142,550.70	5.35	4.6	533	18	0.127	1.403E-05
CPS_106	HORIZONTAL	594,774.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_107	HORIZONTAL	594,799.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_108	HORIZONTAL	594,824.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_109	HORIZONTAL	594,849.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_110	HORIZONTAL	594,874.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_111	HORIZONTAL	594,899.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_112	HORIZONTAL	594,924.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_113	HORIZONTAL	594,949.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_114	HORIZONTAL	594,974.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_115	HORIZONTAL	594,999.27	4,142,550.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_116	HORIZONTAL	595,024.27	4,142,550.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_117	HORIZONTAL	594,666.10	4,142,575.90	5.00	4.6	533	18	0.127	1.403E-05
CPS_118	HORIZONTAL	594,699.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_119	HORIZONTAL	594,724.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_120	HORIZONTAL	594,749.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_121	HORIZONTAL	594,774.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_122	HORIZONTAL	594,799.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_123	HORIZONTAL	594,824.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_124	HORIZONTAL	594,849.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_125	HORIZONTAL	594,874.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_126	HORIZONTAL	594,899.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_127	HORIZONTAL	594,924.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_128	HORIZONTAL	594,949.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_129	HORIZONTAL	594,974.27	4,142,575.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_130	HORIZONTAL	594,999.27	4,142,575.70	4.03	4.6	533	18	0.127	1.403E-05
CPS_131	HORIZONTAL	595,021.15	4,142,571.26	4.00	4.6	533	18	0.127	1.403E-05
CPS_132	HORIZONTAL	594,652.16	4,142,601.47	5.00	4.6	533	18	0.127	1.403E-05
CPS_133	HORIZONTAL	594,674.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_134	HORIZONTAL	594,699.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_135	HORIZONTAL	594,724.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_136	HORIZONTAL	594,749.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_137	HORIZONTAL	594,774.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_138	HORIZONTAL	594,799.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_139	HORIZONTAL	594,824.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05

AERMOD Source Inputs for Demolition and Construction HRA
Lightspeed SJC02
November 2019

CPS_140	HORIZONTAL	594,849.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_141	HORIZONTAL	594,874.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_142	HORIZONTAL	594,899.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_143	HORIZONTAL	594,924.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_144	HORIZONTAL	594,949.27	4,142,600.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_145	HORIZONTAL	594,974.27	4,142,600.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_146	HORIZONTAL	594,996.05	4,142,596.35	4.00	4.6	533	18	0.127	1.403E-05
CPS_147	HORIZONTAL	594,649.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_148	HORIZONTAL	594,674.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_149	HORIZONTAL	594,699.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_150	HORIZONTAL	594,724.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_151	HORIZONTAL	594,749.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_152	HORIZONTAL	594,774.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_153	HORIZONTAL	594,799.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_154	HORIZONTAL	594,824.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_155	HORIZONTAL	594,849.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_156	HORIZONTAL	594,874.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_157	HORIZONTAL	594,899.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_158	HORIZONTAL	594,924.27	4,142,625.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_159	HORIZONTAL	594,949.27	4,142,625.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_160	HORIZONTAL	594,974.27	4,142,625.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_161	HORIZONTAL	594,649.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_162	HORIZONTAL	594,674.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_163	HORIZONTAL	594,699.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_164	HORIZONTAL	594,724.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_165	HORIZONTAL	594,749.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_166	HORIZONTAL	594,774.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_167	HORIZONTAL	594,799.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_168	HORIZONTAL	594,824.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_169	HORIZONTAL	594,849.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_170	HORIZONTAL	594,874.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_171	HORIZONTAL	594,899.27	4,142,650.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_172	HORIZONTAL	594,924.27	4,142,650.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_173	HORIZONTAL	594,949.27	4,142,650.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_174	HORIZONTAL	594,649.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_175	HORIZONTAL	594,674.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_176	HORIZONTAL	594,699.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_177	HORIZONTAL	594,724.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_178	HORIZONTAL	594,749.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_179	HORIZONTAL	594,774.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_180	HORIZONTAL	594,799.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_181	HORIZONTAL	594,824.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_182	HORIZONTAL	594,849.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_183	HORIZONTAL	594,874.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_184	HORIZONTAL	594,899.27	4,142,675.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_185	HORIZONTAL	594,924.27	4,142,675.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_186	HORIZONTAL	594,624.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_187	HORIZONTAL	594,649.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_188	HORIZONTAL	594,674.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_189	HORIZONTAL	594,699.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_190	HORIZONTAL	594,724.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_191	HORIZONTAL	594,749.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_192	HORIZONTAL	594,774.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_193	HORIZONTAL	594,799.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_194	HORIZONTAL	594,824.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_195	HORIZONTAL	594,849.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_196	HORIZONTAL	594,874.27	4,142,700.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_197	HORIZONTAL	594,899.27	4,142,700.70	4.75	4.6	533	18	0.127	1.403E-05
CPS_198	HORIZONTAL	594,624.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_199	HORIZONTAL	594,649.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_200	HORIZONTAL	594,674.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_201	HORIZONTAL	594,699.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_202	HORIZONTAL	594,724.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_203	HORIZONTAL	594,749.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_204	HORIZONTAL	594,774.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_205	HORIZONTAL	594,799.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_206	HORIZONTAL	594,824.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_207	HORIZONTAL	594,849.27	4,142,725.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_208	HORIZONTAL	594,869.65	4,142,719.97	5.00	4.6	533	18	0.127	1.403E-05
CPS_209	HORIZONTAL	594,624.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_210	HORIZONTAL	594,649.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05

AERMOD Source Inputs for Demolition and Construction HRA
Lightspeed SJC02
November 2019

CPS_211	HORIZONTAL	594,674.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_212	HORIZONTAL	594,699.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_213	HORIZONTAL	594,724.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_214	HORIZONTAL	594,749.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_215	HORIZONTAL	594,774.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_216	HORIZONTAL	594,799.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_217	HORIZONTAL	594,824.27	4,142,750.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_218	HORIZONTAL	594,604.61	4,142,777.34	5.00	4.6	533	18	0.127	1.403E-05
CPS_219	HORIZONTAL	594,624.27	4,142,775.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_220	HORIZONTAL	594,649.27	4,142,775.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_221	HORIZONTAL	594,674.27	4,142,775.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_222	HORIZONTAL	594,699.27	4,142,775.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_223	HORIZONTAL	594,724.27	4,142,775.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_224	HORIZONTAL	594,749.27	4,142,775.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_225	HORIZONTAL	594,774.27	4,142,775.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_226	HORIZONTAL	594,797.61	4,142,772.02	5.00	4.6	533	18	0.127	1.403E-05
CPS_227	HORIZONTAL	594,599.27	4,142,800.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_228	HORIZONTAL	594,624.27	4,142,800.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_229	HORIZONTAL	594,649.27	4,142,800.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_230	HORIZONTAL	594,674.27	4,142,800.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_231	HORIZONTAL	594,699.27	4,142,800.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_232	HORIZONTAL	594,724.27	4,142,800.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_233	HORIZONTAL	594,749.27	4,142,800.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_234	HORIZONTAL	594,774.27	4,142,800.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_235	HORIZONTAL	594,599.27	4,142,825.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_236	HORIZONTAL	594,624.27	4,142,825.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_237	HORIZONTAL	594,649.27	4,142,825.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_238	HORIZONTAL	594,674.27	4,142,825.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_239	HORIZONTAL	594,699.27	4,142,825.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_240	HORIZONTAL	594,724.27	4,142,825.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_241	HORIZONTAL	594,749.27	4,142,825.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_242	HORIZONTAL	594,769.26	4,142,820.35	5.00	4.6	533	18	0.127	1.403E-05
CPS_243	HORIZONTAL	594,588.49	4,142,849.62	5.00	4.6	533	18	0.127	1.403E-05
CPS_244	HORIZONTAL	594,624.27	4,142,850.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_245	HORIZONTAL	594,649.27	4,142,850.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_246	HORIZONTAL	594,674.27	4,142,850.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_247	HORIZONTAL	594,699.27	4,142,850.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_248	HORIZONTAL	594,724.27	4,142,850.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_249	HORIZONTAL	594,749.27	4,142,850.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_250	HORIZONTAL	594,574.27	4,142,875.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_251	HORIZONTAL	594,599.27	4,142,875.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_252	HORIZONTAL	594,624.27	4,142,875.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_253	HORIZONTAL	594,649.27	4,142,875.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_254	HORIZONTAL	594,674.27	4,142,875.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_255	HORIZONTAL	594,699.27	4,142,875.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_256	HORIZONTAL	594,724.27	4,142,875.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_257	HORIZONTAL	594,744.64	4,142,871.00	5.00	4.6	533	18	0.127	1.403E-05
CPS_258	HORIZONTAL	594,574.27	4,142,900.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_259	HORIZONTAL	594,599.27	4,142,900.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_260	HORIZONTAL	594,624.27	4,142,900.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_261	HORIZONTAL	594,649.27	4,142,900.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_262	HORIZONTAL	594,674.27	4,142,900.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_263	HORIZONTAL	594,699.27	4,142,900.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_264	HORIZONTAL	594,724.27	4,142,900.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_265	HORIZONTAL	594,240.81	4,142,923.57	4.00	4.6	533	18	0.127	1.403E-05
CPS_266	HORIZONTAL	594,266.90	4,142,929.56	4.00	4.6	533	18	0.127	1.403E-05
CPS_267	HORIZONTAL	594,574.27	4,142,925.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_268	HORIZONTAL	594,599.27	4,142,925.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_269	HORIZONTAL	594,624.27	4,142,925.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_270	HORIZONTAL	594,649.27	4,142,925.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_271	HORIZONTAL	594,674.27	4,142,925.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_272	HORIZONTAL	594,699.27	4,142,925.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_273	HORIZONTAL	594,724.27	4,142,925.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_274	HORIZONTAL	594,228.33	4,142,952.33	4.00	4.6	533	18	0.127	1.403E-05
CPS_275	HORIZONTAL	594,249.27	4,142,950.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_276	HORIZONTAL	594,274.27	4,142,950.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_277	HORIZONTAL	594,299.27	4,142,950.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_278	HORIZONTAL	594,324.27	4,142,950.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_279	HORIZONTAL	594,352.41	4,142,956.98	4.00	4.6	533	18	0.127	1.403E-05
CPS_280	HORIZONTAL	594,568.04	4,142,950.47	5.00	4.6	533	18	0.127	1.403E-05
CPS_281	HORIZONTAL	594,599.27	4,142,950.70	5.00	4.6	533	18	0.127	1.403E-05

AERMOD Source Inputs for Demolition and Construction HRA
Lightspeed SJC02
November 2019

CPS_282	HORIZONTAL	594,624.27	4,142,950.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_283	HORIZONTAL	594,649.27	4,142,950.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_284	HORIZONTAL	594,674.27	4,142,950.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_285	HORIZONTAL	594,699.27	4,142,950.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_286	HORIZONTAL	594,718.90	4,142,948.42	5.00	4.6	533	18	0.127	1.403E-05
CPS_287	HORIZONTAL	594,224.27	4,142,975.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_288	HORIZONTAL	594,249.27	4,142,975.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_289	HORIZONTAL	594,274.27	4,142,975.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_290	HORIZONTAL	594,299.27	4,142,975.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_291	HORIZONTAL	594,324.27	4,142,975.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_292	HORIZONTAL	594,349.27	4,142,975.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_293	HORIZONTAL	594,374.27	4,142,975.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_294	HORIZONTAL	594,399.27	4,142,975.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_295	HORIZONTAL	594,425.84	4,142,979.28	4.00	4.6	533	18	0.127	1.403E-05
CPS_296	HORIZONTAL	594,549.27	4,142,975.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_297	HORIZONTAL	594,574.27	4,142,975.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_298	HORIZONTAL	594,599.27	4,142,975.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_299	HORIZONTAL	594,624.27	4,142,975.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_300	HORIZONTAL	594,649.27	4,142,975.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_301	HORIZONTAL	594,674.27	4,142,975.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_302	HORIZONTAL	594,699.27	4,142,975.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_303	HORIZONTAL	594,224.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_304	HORIZONTAL	594,249.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_305	HORIZONTAL	594,274.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_306	HORIZONTAL	594,299.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_307	HORIZONTAL	594,324.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_308	HORIZONTAL	594,349.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_309	HORIZONTAL	594,374.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_310	HORIZONTAL	594,399.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_311	HORIZONTAL	594,424.27	4,143,000.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_312	HORIZONTAL	594,449.27	4,143,000.70	4.41	4.6	533	18	0.127	1.403E-05
CPS_313	HORIZONTAL	594,474.27	4,143,000.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_314	HORIZONTAL	594,499.73	4,143,005.77	5.00	4.6	533	18	0.127	1.403E-05
CPS_315	HORIZONTAL	594,549.27	4,143,000.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_316	HORIZONTAL	594,574.27	4,143,000.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_317	HORIZONTAL	594,599.27	4,143,000.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_318	HORIZONTAL	594,624.27	4,143,000.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_319	HORIZONTAL	594,649.27	4,143,000.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_320	HORIZONTAL	594,674.27	4,143,000.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_321	HORIZONTAL	594,699.27	4,143,000.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_322	HORIZONTAL	594,204.17	4,143,024.36	4.00	4.6	533	18	0.127	1.403E-05
CPS_323	HORIZONTAL	594,224.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_324	HORIZONTAL	594,249.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_325	HORIZONTAL	594,274.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_326	HORIZONTAL	594,299.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_327	HORIZONTAL	594,324.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_328	HORIZONTAL	594,349.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_329	HORIZONTAL	594,374.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_330	HORIZONTAL	594,399.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_331	HORIZONTAL	594,424.27	4,143,025.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_332	HORIZONTAL	594,449.27	4,143,025.70	4.37	4.6	533	18	0.127	1.403E-05
CPS_333	HORIZONTAL	594,474.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_334	HORIZONTAL	594,499.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_335	HORIZONTAL	594,524.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_336	HORIZONTAL	594,549.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_337	HORIZONTAL	594,574.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_338	HORIZONTAL	594,599.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_339	HORIZONTAL	594,624.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_340	HORIZONTAL	594,649.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_341	HORIZONTAL	594,674.27	4,143,025.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_342	HORIZONTAL	594,693.52	4,143,037.84	5.00	4.6	533	18	0.127	1.403E-05
CPS_343	HORIZONTAL	594,199.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_344	HORIZONTAL	594,224.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_345	HORIZONTAL	594,249.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_346	HORIZONTAL	594,274.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_347	HORIZONTAL	594,299.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_348	HORIZONTAL	594,324.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_349	HORIZONTAL	594,349.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_350	HORIZONTAL	594,374.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_351	HORIZONTAL	594,399.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_352	HORIZONTAL	594,424.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05

AERMOD Source Inputs for Demolition and Construction HRA
Lightspeed SJC02
November 2019

CPS_353	HORIZONTAL	594,449.27	4,143,050.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_354	HORIZONTAL	594,474.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_355	HORIZONTAL	594,499.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_356	HORIZONTAL	594,524.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_357	HORIZONTAL	594,549.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_358	HORIZONTAL	594,574.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_359	HORIZONTAL	594,599.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_360	HORIZONTAL	594,624.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_361	HORIZONTAL	594,649.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_362	HORIZONTAL	594,674.27	4,143,050.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_363	HORIZONTAL	594,199.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_364	HORIZONTAL	594,224.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_365	HORIZONTAL	594,249.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_366	HORIZONTAL	594,274.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_367	HORIZONTAL	594,299.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_368	HORIZONTAL	594,324.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_369	HORIZONTAL	594,349.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_370	HORIZONTAL	594,374.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_371	HORIZONTAL	594,399.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_372	HORIZONTAL	594,424.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_373	HORIZONTAL	594,449.27	4,143,075.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_374	HORIZONTAL	594,474.27	4,143,075.70	4.21	4.6	533	18	0.127	1.403E-05
CPS_375	HORIZONTAL	594,499.27	4,143,075.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_376	HORIZONTAL	594,524.27	4,143,075.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_377	HORIZONTAL	594,549.27	4,143,075.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_378	HORIZONTAL	594,574.27	4,143,075.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_379	HORIZONTAL	594,599.27	4,143,075.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_380	HORIZONTAL	594,624.27	4,143,075.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_381	HORIZONTAL	594,649.27	4,143,075.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_382	HORIZONTAL	594,674.27	4,143,075.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_383	HORIZONTAL	594,274.34	4,143,097.32	4.00	4.6	533	18	0.127	1.403E-05
CPS_384	HORIZONTAL	594,299.27	4,143,100.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_385	HORIZONTAL	594,324.27	4,143,100.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_386	HORIZONTAL	594,349.27	4,143,100.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_387	HORIZONTAL	594,374.27	4,143,100.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_388	HORIZONTAL	594,399.27	4,143,100.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_389	HORIZONTAL	594,424.27	4,143,100.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_390	HORIZONTAL	594,449.27	4,143,100.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_391	HORIZONTAL	594,474.27	4,143,100.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_392	HORIZONTAL	594,499.27	4,143,100.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_393	HORIZONTAL	594,524.27	4,143,100.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_394	HORIZONTAL	594,549.27	4,143,100.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_395	HORIZONTAL	594,574.27	4,143,100.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_396	HORIZONTAL	594,599.27	4,143,100.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_397	HORIZONTAL	594,624.27	4,143,100.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_398	HORIZONTAL	594,649.27	4,143,100.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_399	HORIZONTAL	594,674.27	4,143,100.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_400	HORIZONTAL	594,350.09	4,143,121.02	4.00	4.6	533	18	0.127	1.403E-05
CPS_401	HORIZONTAL	594,374.27	4,143,125.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_402	HORIZONTAL	594,399.27	4,143,125.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_403	HORIZONTAL	594,424.27	4,143,125.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_404	HORIZONTAL	594,449.27	4,143,125.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_405	HORIZONTAL	594,474.27	4,143,125.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_406	HORIZONTAL	594,499.27	4,143,125.70	4.98	4.6	533	18	0.127	1.403E-05
CPS_407	HORIZONTAL	594,524.27	4,143,125.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_408	HORIZONTAL	594,549.27	4,143,125.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_409	HORIZONTAL	594,574.27	4,143,125.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_410	HORIZONTAL	594,599.27	4,143,125.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_411	HORIZONTAL	594,624.27	4,143,125.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_412	HORIZONTAL	594,649.27	4,143,125.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_413	HORIZONTAL	594,674.27	4,143,125.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_414	HORIZONTAL	594,424.91	4,143,146.58	4.00	4.6	533	18	0.127	1.403E-05
CPS_415	HORIZONTAL	594,449.27	4,143,150.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_416	HORIZONTAL	594,474.27	4,143,150.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_417	HORIZONTAL	594,499.27	4,143,150.70	4.00	4.6	533	18	0.127	1.403E-05
CPS_418	HORIZONTAL	594,524.27	4,143,150.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_419	HORIZONTAL	594,549.27	4,143,150.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_420	HORIZONTAL	594,574.27	4,143,150.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_421	HORIZONTAL	594,599.27	4,143,150.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_422	HORIZONTAL	594,624.27	4,143,150.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_423	HORIZONTAL	594,649.27	4,143,150.70	5.00	4.6	533	18	0.127	1.403E-05

AERMOD Source Inputs for Demolition and Construction HRA
Lightspeed SJC02
November 2019

CPS_424	HORIZONTAL	594,674.27	4,143,150.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_425	HORIZONTAL	594,499.26	4,143,171.21	4.00	4.6	533	18	0.127	1.403E-05
CPS_426	HORIZONTAL	594,524.27	4,143,175.70	4.80	4.6	533	18	0.127	1.403E-05
CPS_427	HORIZONTAL	594,549.27	4,143,175.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_428	HORIZONTAL	594,574.27	4,143,175.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_429	HORIZONTAL	594,599.27	4,143,175.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_430	HORIZONTAL	594,624.27	4,143,175.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_431	HORIZONTAL	594,649.27	4,143,175.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_432	HORIZONTAL	594,674.27	4,143,175.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_433	HORIZONTAL	594,599.27	4,143,200.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_434	HORIZONTAL	594,624.27	4,143,200.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_435	HORIZONTAL	594,649.27	4,143,200.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_436	HORIZONTAL	594,674.27	4,143,200.70	5.00	4.6	533	18	0.127	1.403E-05
CPS_437	HORIZONTAL	594,674.00	4,143,220.01	5.00	4.6	533	18	0.127	1.403E-05

Note:

[a] Coordinates are provided in NAD83 UTM Projection, Zone 10.

[b] DPM emission rates taken from Appendix 3.3-D, Table 1, assuming even distribution amongst the modeled sources within the demolition and construction area.

Appendix 3.3-D, Table 3
Cancer Impacts due to Demolition and Construction Diesel Particulate Matter
Lightspeed SJC02
November 2019

Modeled Concentrations
Maximum annual impact of annualized project emissions

PMI	0.0745	μg/m^3	Diesel PM
MEIR	0.01418	μg/m^3	Diesel PM
Sensitive	0.00165	μg/m^3	Diesel PM
MEIW	0.0745	μg/m^3	Diesel PM

Demolition and Construction HRA per the 2015 OEHHA Guidance
Residential Calculation Procedure for Cancer Risks

PMI

Year	0 (3rd tri)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Dose (mg/kg/day)	2.58E-05	7.80E-05	7.80E-05	6.16E-05	6.16E-05	6.16E-05	6.16E-05	6.16E-05	6.16E-05	5.33E-05	5.33E-05	5.33E-05	5.33E-05	5.33E-05	5.33E-05	5.33E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05	2.40E-05
Risk	8.62E-07	1.04E-05	1.04E-05	2.09E-06	2.09E-06	2.09E-06	2.09E-06	2.09E-06	2.09E-06	1.81E-06	1.81E-06	1.81E-06	1.81E-06	1.81E-06	1.81E-06	1.81E-06	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07	2.75E-07
Rolling 2-yr Risk [a]			2.17E-05	1.25E-05	4.18E-06	4.18E-06	4.18E-06	4.18E-06	4.18E-06	3.90E-06	3.62E-06	3.62E-06	3.62E-06	3.62E-06	3.62E-06	3.62E-06	2.08E-06	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07	5.50E-07
Risk per Million			21.69	12.50	4.18	4.18	4.18	4.18	4.18	3.90	3.62	3.62	3.62	3.62	3.62	3.62	2.08	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55

MEIR

Year	0 (3rd tri)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Dose (mg/kg/day)	4.91E-06	1.48E-05	1.48E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06	4.56E-06
Risk	1.64E-07	1.98E-06	1.98E-06	3.98E-07	3.98E-07	3.98E-07	3.98E-07	3.98E-07	3.98E-07	3.44E-07	3.44E-07	3.44E-07	3.44E-07	3.44E-07	3.44E-07	3.44E-07	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08	5.23E-08
Rolling 2-yr Risk [a]			4.13E-06	2.38E-06	7.96E-07	7.96E-07	7.96E-07	7.96E-07	7.96E-07	7.42E-07	6.88E-07	6.88E-07	6.88E-07	6.88E-07	6.88E-07	6.88E-07	3.97E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07
Risk per Million			4.13	2.38	0.80	0.80	0.80	0.80	0.80	0.74	0.69	0.69	0.69	0.69	0.69	0.69	0.40	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

MESR

Year	0 (3rd tri)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Dose (mg/kg/day)	5.72E-07	1.73E-06	1.73E-06	1.36E-06	1.36E-06	1.36E-06	1.36E-06	1.36E-06	1.36E-06	1.18E-06	1.18E-06	1.18E-06	1.18E-06	1.18E-06	1.18E-06	1.18E-06	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07	5.31E-07
Risk	1.91E-08	2.31E-07	2.31E-07	4.63E-08	4.63E-08	4.63E-08	4.63E-08	4.63E-08	4.63E-08	4.01E-08	4.01E-08	4.01E-08	4.01E-08	4.01E-08	4.01E-08	4.01E-08	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09	6.09E-09
Rolling 2-yr Risk [a]			4.80E-07	2.77E-07	9.26E-08	9.26E-08	9.26E-08	9.26E-08	9.26E-08	8.63E-08	8.01E-08	8.01E-08	8.01E-08	8.01E-08	8.01E-08	8.01E-08	4.61E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08	1.22E-08
Risk per Million			0.48	0.28	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Worker Calculation Procedure for Cancer Risks

MEIW

Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Dose (mg/kg/day)	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05
Risk	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07	1.83E-07
Rolling 2-yr Risk [a]		3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07	3.66E-07
Risk per Million		0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37

Note:
[a] Cancer risk was summed on a 2-year rolling basis to conservatively mirror the 17-month duration of project construction, of which the first month includes demolition activities.

Appendix 3.3-D, Table 4
Chronic Impacts due to Demolition and Construction Diesel Particulate Matter
Lightspeed SJC02
November 2019

Demolition and Construction HRA per the 2015 OEHHA Guidance
Calculation Procedure for Chronic Hazard Index

Receptor Type	Pollutant	Maximum Annual Modeled Concentration ($\mu g/m^3$) [a]	REL ($\mu g/m^3$) [b]	Chronic Hazard Index
PMI	Diesel PM	0.0745	5	0.0149
MEIR	Diesel PM	0.01418	5	0.0028
MESR	Diesel PM	0.00165	5	0.0003
MEIW	Diesel PM	0.0745	5	0.0149

Notes:

[a] Maximum Annual Modeled Concentrations taken from Appendix 3.3-D, Table 3.

[b] REL taken from the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values (OEHHA & ARB, 2018).

Appendix 3.3-D, Table 5
Residential Constants for Cancer Risk
Lightspeed SJC02
November 2019

Dose Constants

Year	0 (3rd tri)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
BR/BW	361	1090	1090	861	861	861	861	861	861	745	745	745	745	745	745	745	335	335	335	335	335	335	335	335	335	335	335	335	335	335	335
A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Conversion	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001

Risk Constants

Year	0 (3rd tri)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CPF (Diesel PM)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
ASF	10	10	10	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ED	0.25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AT	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
FAH	0.85	0.85	0.85	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73

Appendix 3.3-D, Table 6
Worker Constants for Cancer Risk
Lightspeed SJC02
November 2019

Dose Constants

Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
WAF [a]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BR/BW	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EF	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Conversion	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001

Risk Constants

Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CPF (Diesel PM)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
ASF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ED	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AT	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70

Notes:
[a] Conservatively assumes construction activities occur 24 hours per day, 7 days per week.

Appendix 3.3E
Operation HRA

Appendix 3.3-E, Table 1
Emissions Inventory for the Operational HRA
Lightspeed SJC02
November 2019

Source ID	Averaging Period	Toxic Air Contaminants [a]										
		Acetaldehye	Acrolein	Ammonia [b]	Benzene	Diesel Particulate Matter	Formaldehyde	Naphthalene	Propylene	Toluene	Total PAH	Xylenes
G1	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G2	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G3	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G4	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G5	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G6	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G7	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G8	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G9	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G10	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G11	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G12	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G13	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G14	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G15	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G16	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G17	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03

Appendix 3.3-E, Table 1
Emissions Inventory for the Operational HRA
Lightspeed SJC02
November 2019

Source ID	Averaging Period	Toxic Air Contaminants [a]										
		Acetaldehye	Acrolein	Ammonia [b]	Benzene	Diesel Particulate Matter	Formaldehyde	Naphthalene	Propylene	Toluene	Total PAH	Xylenes
G18	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G19	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G20	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G21	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G22	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G23	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G24	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G25	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G26	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G27	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G28	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G29	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G30	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G31	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G32	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G33	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G34	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03

Appendix 3.3-E, Table 1
Emissions Inventory for the Operational HRA
Lightspeed SJC02
November 2019

Source ID	Averaging Period	Toxic Air Contaminants [a]										
		Acetaldehye	Acrolein	Ammonia [b]	Benzene	Diesel Particulate Matter	Formaldehyde	Naphthalene	Propylene	Toluene	Total PAH	Xylenes
G35	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G36	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G37	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G38	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G39	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G40	Annual (lb/yr)	0.00	0.00	8.42	0.00	8.77	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	7.02E-04	2.20E-04	2.01E-01	2.16E-02	2.09E-01	2.20E-03	3.62E-03	7.78E-02	7.83E-03	5.91E-03	5.38E-03
G41	Annual (lb/yr)	0.00	0.00	3.77	0.00	3.70	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	3.15E-04	9.84E-05	8.99E-02	9.69E-03	8.82E-02	9.85E-04	1.62E-03	3.48E-02	3.51E-03	2.65E-03	2.41E-03
G42	Annual (lb/yr)	0.00	0.00	1.43	0.00	1.49	0.00	0.00	0.00	0.00	0.00	0.00
	Max Hourly (lb/hr)	1.20E-04	3.74E-05	3.42E-02	3.68E-03	3.55E-02	3.75E-04	6.17E-04	1.32E-02	1.33E-03	1.01E-03	9.16E-04

Note:
[a] Toxic air contaminants and hazardous air pollutants included in the health risk modeling were selected based on OEHHA Guidance (OEHHA, 2015). Aside from Ammonia, Diesel Particulate Matter (DPM) was the only TAC modeled. Because DPM only has chronic health risk impacts, speciated DPM TACs were conservatively included for determining acute health risk impacts.
[b] Ammonia emissions have been conservatively included in the health risk modeling. This TAC is only expected to be emited during emergency operations when the selective catalytic reduction (SCR) system is functional.

Appendix 3.3-E, Table 2
Detailed Facility-Wide Operational HRA Results
Lightspeed SJC02
November 2019

Receptor Type	Risk Type	Risk Value		Receptor Number	UTM Easting (m) [a]	UTM Northing (m) [a]	Receptor Description
PMI	Acute	0.14		644	594,600.00	4,142,700.00	
PMI	Chronic	1.75E-03		4	594,790.70	4,142,341.00	
PMI	Cancer, Worker Exposure	0.53	(in 1 million)	4	594,790.70	4,142,341.00	
PMI	Cancer, Residential Exposure	6.36	(in 1 million)	4	594,790.70	4,142,341.00	
MESR	Cancer, Residential Exposure	0.34	(in 1 million)	4020	596,764.98	4,142,305.37	Barbara Lee Senior Center
MESR	Chronic	9.3E-05		4020	596,764.98	4,142,305.37	Barbara Lee Senior Center
MESR	Acute	0.02		4014	595,860.62	4,142,964.31	Big Brothers Big Sisters of the Bay Area
MEIW	Cancer, Worker Exposure	0.53	(in 1 million)	4	594,790.70	4,142,341.00	
MEIW	Chronic	1.8E-03		4	594,790.70	4,142,341.00	
MEIW	Acute	0.14		644	594,600.00	4,142,700.00	
MEIR	Cancer, Residential Exposure	2.38	(in 1 million)	1387	594,900.00	4,141,850.00	
MEIR	Chronic	6.5E-04		1387	594,900.00	4,141,850.00	
MEIR	Acute	0.14		644	594,600.00	4,142,700.00	

Notes:
[a] Coordinates are provided in NAD83 UTM Projection, Zone 10.

Appendix 3.3-E, Table 3
Detailed Single Unit Operational HRA Results
Lightspeed SJC02
November 2019

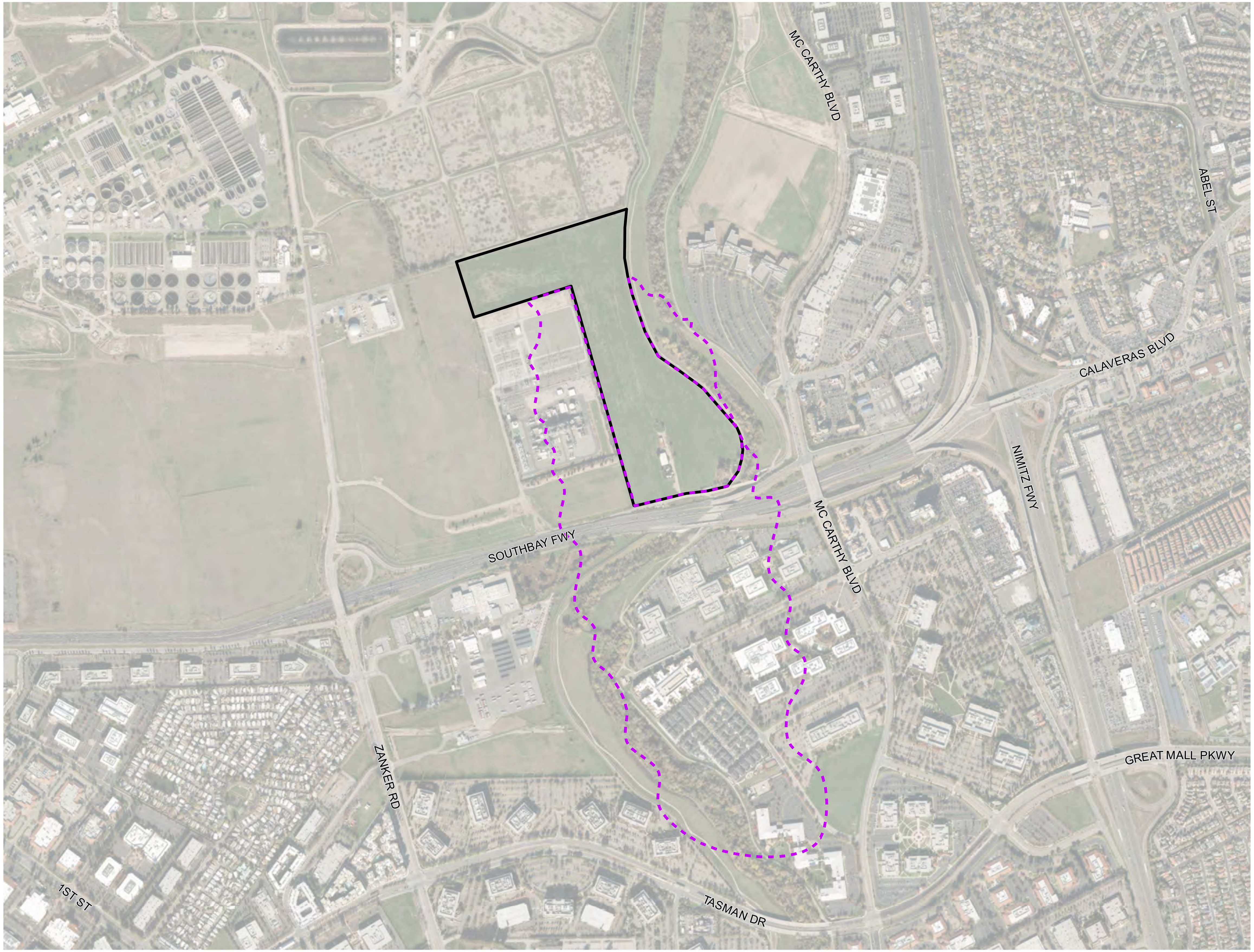
Receptor Type	Risk Type	Risk Value		Receptor Number	UTM Easting (m) [a]	UTM Northing (m) [a]	Receptor Description
PMI	Acute	2.41E-02		128	594,673.10	4,142,488.30	
PMI	Chronic	3.10E-04		112	594,565.60	4,142,862.70	
PMI	Cancer, Worker Exposure	0.09	(in 1 million)	112	594,565.60	4,142,862.70	
PMI	Cancer, Residential Exposure	1.13	(in 1 million)	112	594,565.60	4,142,862.70	
MESR	Cancer, Residential Exposure	9.43E-03	(in 1 million)	4016	596,126.05	4,142,630.14	Achieving Stars Acedemy
MESR	Chronic	2.60E-06		4016	596,126.05	4,142,630.14	Achieving Stars Acedemy
MESR	Acute	4.85E-04		4014	595,860.62	4,142,964.31	Big Brothers Big Sisters of the Bay Area
MEIW	Cancer, Worker Exposure	0.09	(in 1 million)	112	594,565.60	4,142,862.70	
MEIW	Chronic	3.10E-04		112	594,565.60	4,142,862.70	
MEIW	Acute	0.02		128	594,673.10	4,142,488.30	
MEIR	Cancer, Residential Exposure	0.11	(in 1 million)	1387	594,900.00	4,141,850.00	
MEIR	Chronic	2.94E-05		1387	594,900.00	4,141,850.00	
MEIR	Acute	0.02		128	594,673.10	4,142,488.30	

Notes:
[a] Coordinates are provided in NAD83 UTM Projection, Zone 10.

Appendix 3.3-E, Table 4
Sensitive Receptors
Lightspeed SJC02
November 2019

Receptor No.	UTM Easting (m) [a]	UTM Northing (m) [a]	Sensitive Receptor Description	Address
4008	595,336.28	4,143,729.75	VITAS Innovative Hospice Care of San Francisco Bay	670 North McCarthy Boulevard #220, Milpitas, California 95035
4009	595,938.29	4,144,217.98	Rainbow Childhood Development Center	227 S Main St., Milpitas, California 95035
4010	596,131.83	4,143,941.45	Plantation Christian School	697 Lexington St., Milpitas, California 95035
4011	596,095.17	4,143,221.60	Anthony Spangler Elementary School	140 N Abbott Ave., Milpitas, California 95035
4012	596,630.56	4,143,426.45	Valley Health Center Milpitas	143 N. Main St., Milpitas, California 95035
4013	596,609.39	4,143,373.19	Valley Health Center Milpitas	143 N. Main St., Milpitas, California 95035
4014	595,860.62	4,142,964.31	Big Brothers Big Sisters of the Bay Area	600 Valley Way, Milpitas, California 95035
4015	596,627.54	4,142,548.66	Merryhill Preschool	123 Corning Ave., Milpitas, California 95035
4016	596,126.05	4,142,630.14	Achieving Stars Academy	301 S Abbott Ave., Milpitas, California 95035
4017	596,136.08	4,144,325.01	Curtner Elementary School	275 Redwood Ave., Milpitas, California 95035
4018	596,430.20	4,143,795.48	Happy Hearts Academy	550 N Abel St., Milpitas, California 95035
4019	596,735.78	4,142,513.19	Milpitas KinderCare	400 S Abel St., Milpitas, California 95035
4020	596,764.98	4,142,305.37	Barbara Lee Senior Center	40 North Milpitas Boulevard Milpitas, California 95035
4021	596,788.82	4,143,188.31	Elan Preschool, Elan Esprit Preschool	40 E Carlo St., Milpitas, California 95035
4022	596,804.00	4,142,715.80	St. John the Baptist Catholic Schoool	360 S Abel St., Milpitas, California 95035

Notes:
[a] Coordinates are provided in NAD83 UTM Projection, Zone 10.



LEGEND

Facility Residential Cancer Risk > 1 in a million

Lightspeed SJC02

Source:
City of San Jose

N

0 1,500 3,000

Approximate scale in feet

Appendix 3.3-E
Figure 1
Facility Residential Cancer Risk
Lightspeed SJC02
San Jose, California

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\E\EDGECORE\GIS\MAPS\REPORT\APPENDIX3_3E_HEALTHRISK.MXD 10/25/2019 11:43:04 AM

Appendix 3.5A
Cultural Resources Technical Report

Cultural Resource Investigation in Support of the San José Data Center (SJC02) Project, Santa Clara County, California

Submitted to:

Jacobs Engineering Group, Inc
2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833

Technical Report 19-232

November 4, 2019

925.253.9070 | paleowest.com | 1870 Olympic Blvd Suite 100 | Walnut Creek, CA 94596

Cultural Resource Investigation in Support of the San José Data Center (SJC02) Project, Santa Clara County, California

Prepared by:
Christina Alonso, M.A., RPA, Justin Castells, M.A., Zackary Babineau

Prepared for:
Jacobs Engineering Group, Inc.

Technical Report No. 19-232

PaleoWest Archaeology
1870 Olympic Drive Suite 100
Walnut Creek, California 94596
(925) 253-9070

November 4, 2019

Keywords: CEQA; Santa Clara Valley; Santa Clara County; San José Data Center (SJC02)

CONTENTS

FIGURES

TABLES

MANAGEMENT SUMMARY

Microsoft proposes the development of a data center campus, the San José Data Center (SJC02) Project (Project), in San José, California. PaleoWest Archaeology (PaleoWest) was contracted by Jacobs Engineering Group, Inc. (Jacobs) to conduct a Phase I cultural resource assessment of the Project area in compliance with the California Environmental Quality Act (CEQA). The California Energy Commission (CEC) is the Lead Agency for the purposes of the CEQA.

This report summarizes the methods and results of the cultural resource investigation of the Project area. This investigation included background research, communication with the Native American Heritage Commission (NAHC) and interested Native American tribal groups, and an intensive pedestrian survey of the Project area. The purpose of the investigation was to determine the potential for the Project to impact historical resources under CEQA.

A cultural resource records search and literature review was conducted on May 23, 2019, at the Northwest Information Center of the California Historical Resource Information System housed at Sonoma State University, in Rohnert Park. This inventory effort included the Project area and a one-mile radius around the Project area, collectively termed the Project study area. The records search indicated that no fewer than 261 previous studies have been conducted within one mile of the Project area, 45 of which include portions of or all of the Project area. In addition, 44 cultural resources (10 prehistoric, 2 multi component, and 22 built resources) have been recorded within one mile of the Project area, four built resources are present within the Project footprint.

As part of the cultural resource assessment of the Project area, PaleoWest also requested a search of the Sacred Lands File (SLF) from the NAHC. The NAHC responded that results of the Sacred Lands File search were positive and to contact the North Valley Yokuts as well as five additional California Native American Tribes to find out if they have additional information about the Project area. All six individuals were contacted. Five responses were received as of July 16, 2019 as a result of the outreach efforts. Recommendations included providing cultural resource training prior to ground disturbing activities and utilizing both a Native American and archaeological monitor if cultural resources are found during Project activities. One tribe, the Northern Valley Yokuts, asked for official consultation with the Lead Agency.

PaleoWest conducted an intensive pedestrian survey of the proposed Project area on July 16, 2019. Field survey methods for both the pedestrian archaeological survey and the architectural history survey were completed in accordance with the California Energy Commission (CEC) required survey methods. No prehistoric or historic archaeological resources were identified during the survey. Two built resources were relocated during the survey effort (P-43-03578 and P-43-003585), the other two buildings previously located within the Project area are no longer extant.

PaleoWest recommends that in the event that potentially significant archaeological materials are encountered during Project-related ground-disturbing activities, all work should be halted in the vicinity of the archaeological discovery until a qualified archaeologist can visit the site of discovery and assess the significance of the archaeological resource. In addition, Health and Safety Code 7050.5, CEQA 15064.5(e), and Public Resources Code 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

1.0 INTRODUCTION

Microsoft proposes development of a data center campus, the San José Data Center (SJC02) Project (Project), in San José, California. PaleoWest Archaeology (PaleoWest) was contracted by Jacobs Engineering, Inc (Jacobs) to conduct a Phase I cultural resource assessment of the Project area in compliance with the California Environmental Quality Act (CEQA). The California Energy Commission (CEC) is the Lead Agency for the purposes of the CEQA.

1.1 PROJECT LOCATION AND DESCRIPTION

The SJC02 Project is a proposed data center campus on an approximate 64.5-acre site located approximately 0.5 mile west of the intersection of I-880 and CA Rte-237 in the City of San José, Santa Clara County, California (Figure 1-1). A channelized portion of Coyote Creek runs immediately to the east of the Project area. The Project area is situated within an unsectioned portion of Township 6 South, Range 1 West, Mount Diablo Base Meridian (MDBM), as depicted on the Milpitas, CA 7.5' U.S. Geological Survey (USGS) topographic quadrangle (Figure 1-2). The elevation of the Project area ranges between 13 and 17 feet above mean sea level (amsl).

The proposed SJC02 Project will consist of two data center buildings totaling over 479,000 square feet of space and the installation of up to 40 – 3MW emergency diesel generators and two administrative generators rated at 500 and 1,250kW. The total expected electrical demand will be no more than 90MW. Emergency generators will be used only as backup power for onsite data center operations in the event of a Pacific Gas & Electric (PG&E) outage. There are two residences and a storage shed/warehousecurrently onsite that will be demolished as part of the SJC02 Project.

The onsite substation will be located in the northwest corner of the project site and will interconnect to the PG&E substation via two, 0.2-mile long distribution lines. The approximately 1,000-foot-long electrical supply lines will be located along the western fenceline of the project site, between the Project site and the Los Esteros Critical Energy Facility (LECEF).

For redundancy purposes, three proposed potable water lines are proposed. Two begin in the northwest corner of the project. Both Water Line Route #1 and Water Line Route #2 begin in the northwestern corner of the project. Both routes travel south to the proposed entrance road, Nortech Extension. From there, they both turn west to Zanker Road. At Zanker Road, Water Line Route #1 heads north briefly and then west, ultimately connecting to the Nortech valve. Water Line Route #1 is approximately 1.5 miles (7,900 feet) long. At Zanker Road, Water Line Route #2 turns south before turning west alongside Highway 237, and eventually turning south to go under Highway 237 to connect to the new Holger Valve. Water Line Route #2 is approximately 1.3 miles (7,100 feet) long. Water Line Route #3 begins at the southwestern corner of the project, and heads generally east to Zanker Road where it will parallel Water Line Route #2 connecting to the new Holger Valve. Water Line Route #3 is approximately 1.4 miles (7,500 feet long). The water will come from the San José Municipal Water System to the Project.

Reclaimed water will be used at the site for landscaping purposes. The reclaimed water line will start at the northwest corner of the project site and proceed south to the proposed entrance road, Nortech Extension. From there the line turns west and ends at an existing reclaimed water line that is oriented generally north to south. The reclaimed water line will be approximately ½-mile (2,900 feet long).

0 miles 10

0 kilometers 15

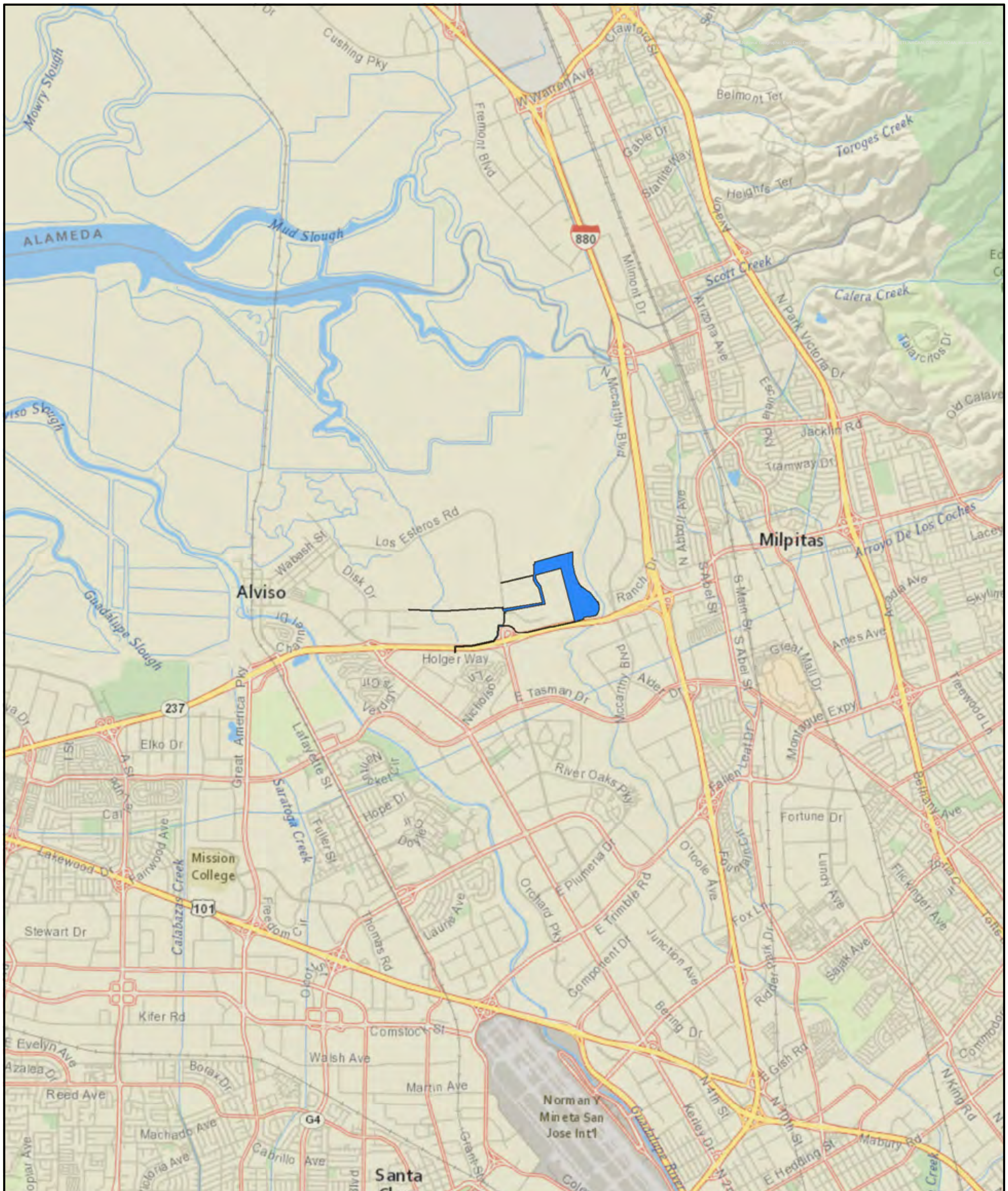
1:775,000

N

Figure 1
Project Vicinity Map

Lightspeed Data Center Project
Santa Clara County, CA

Project Vicinity



PALEO WEST archaeology

0 miles 1

0 kilometers 1.5

1:80,000

N

Figure 2
Project Area Map

Lightspeed Data Center Project
Santa Clara County, CA

Project Area

The sanitary sewer line will begin at the northwest corner of the property, and head south to the proposed entrance road, where the line turns to the west. At Zanker Road the sewer line turns south and will connect to the existing sanitary sewer force main/pump station at the corner of Zanker Road and Thomas Foon Chew Way. The sewer line is approximately 0.6 mile (3,300 feet long).

The stormwater line for the Project will begin in the northwest corner of the project site, paralleling the water line route. The stormwater line will terminate at Nortech Parkway extension off of Zanker Road where it will tie into the City of San José's stormwater system in the vicinity of Nortech Parkway. The stormwater line to Zanker Road is approximately 0.55 miles (3,000 feet).

1.2 REPORT ORGANIZATION

This report documents the results of a cultural resource investigation conducted for the proposed Project. Chapter 1 has introduced the Project location and description. Chapter 2 states the regulatory context that should be considered for the Project. Chapter 3 synthesizes the natural and cultural setting of the Project area and surrounding region. The results of the cultural resource literature and records search conducted at the Northwest Information Center (NWIC) and the Sacred Lands File (SLF) search, and a summary of the Native American communications is presented in Chapter 4. The field methods employed during this investigation and findings are outlined in Chapter 5 with management recommendation provided in Chapter 6. This is followed by bibliographic references and appendices.

2.0 REGULATORY CONTEXT

2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The proposed Project is subject to compliance with CEQA, as amended. Compliance with CEQA statutes and guidelines requires both public and private projects with financing or approval from a public agency to assess the project's impact on cultural resources (Public Resources Code Section 21082, 21083.2 and 21084 and California Code of Regulations 10564.5). The first step in the process is to identify cultural resources that may be impacted by the project and then determine whether the resources are "historically significant" resources.

CEQA defines historically significant resources as "resources listed or eligible for listing in the California Register of Historical Resources (CRHR)" (Public Resources Code Section 5024.1). A cultural resource may be considered historically significant if the resource is 45 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and meets any of the following criteria for listing on the CRHR:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
4. Has yielded, or may be likely to yield, information important in prehistory or history (Public Resources Code Section 5024.1).

Cultural resources are buildings, sites, humanly modified landscapes, traditional cultural properties, structures, or objects that may have historical, architectural, cultural, or scientific importance. CEQA states that if a project will have a significant impact on important cultural resources, deemed "historically significant," then project alternatives and mitigation measures must be considered. Additionally, any proposed project that may affect historically significant cultural resources must be submitted to the State Historic Preservation Officer (SHPO) for review and comment prior to project approval by the responsible agency and prior to construction.

3.0 SETTING

This section of the report summarizes information regarding the physical and cultural setting of the Project area, including the prehistoric, ethnographic, and historic contexts of the region. Several factors, including topography, available water sources, and biological resources, affect the nature and distribution of prehistoric, ethnographic, and historic-period human activities in an area. This background provides a context for understanding the nature of the cultural resources that may be identified within the region.

3.1 ENVIRONMENTAL SETTING

The Project area is located south of the San Francisco Bay. The Project area ecology, though heavily impacted by dense urban development, is coastal littoral, which consists of land strips along the coast that are characterized by a series of microenvironments including estuaries, bays, marshes, and grassy terraces (Chartkoff and Chartkoff 1984). The Project area is located approximately 6.5 miles southeast of the Bay waters and 3 miles from the salt flats leading to the Bay. Agricultural activities are known to have taken place in the immediate Project vicinity since the mid-1870s, and within the Project area itself from at least the mid-1940s and probably earlier. Development on the property has impacted the entire Project area.

The climate of the Project area is Mediterranean: mild, rainy winters, and hot, dry summers. Annual precipitation in the region is approximately 14.5 inches, with rainfall concentrated in the fall, winter, and spring. The San Francisco Peninsula's proximity to the Pacific Ocean provides for mild temperatures throughout the year. Winter temperatures vary from an average high of approximately 60°F to an average low of approximately 39°F; summer temperatures vary from an average high of approximately 81°F to an average low of approximately 52°F (Western Regional Climate Center 2010)

Common vegetation throughout the region includes Valley Oak (*Quercus lobata*), Live Oak (*Quercus agrifolia*), California buckeye (*Aesculus californica*), California bay laurel (*Umbellularia californica*), star thistle (*Centaurea solstitialis*), wild oats (*Avena fatua*), morning glories (*Convolvulus*), lupine (*Lupinus*), poppies (*Papaver*), wild artichokes (*Cynara scolymus*), and various other native and imported grasses (Brown 1985).

Animal life within the region is diverse. Unlike prehistoric times when animals such as pronghorn, antelope, tule elk, mule deer, black-tail deer, and grizzly bear occupied the area, the region today favors small, herbivorous mammals, especially voles, pocket gophers, ground squirrels, and pocket mice (Brown 1985). The few larger, open areas in the region attract some larger animals including deer, rabbit, skunk, opossum, raccoon, and a number of birds including red-tailed hawks and turkey vultures.

3.2 PREHISTORIC SETTING

Research into local prehistoric cultures began with the work of N. C. Nelson of the University of California, who conducted the first intensive archaeological surveys of the San Francisco Bay region from 1906 to 1908. Nelson documented 425 shellmounds along the Bay shoreline and adjacent coast when the Bay was still ringed by salt marshes up to 5 miles wide (Nelson 1909). He maintained that the intensive use of shellfish, a subsistence strategy reflected in both coastal and bay shoreline middens, indicated a general economic unity in the region during prehistoric times, and he introduced the idea of a distinct San Francisco Bay archaeological region (Moratto 1984:227).

In 1911, Nelson supervised excavations at CA-SFR-7 (the Crocker Mound) near Hunter's Point in San Francisco County, a site that was later dated from 1050 B.C. to A.D. 450. L. L. Loud identified archaeological components from this same period in Santa Clara County in 1911 while excavating at CA-SCL-1 (the Ponce, Mayfield, or Castro Mound site) (Loud 1912). R. J. Drake recognized comparably dated archaeological components in San Mateo County in 1941–1942 at CA-SMA-23 (Mills Estate) in San Bruno (Moratto 1984:233).

Conducted more or less independently from the work of Nelson and Loud, investigations into the prehistory of the Central Valley of California, presaged by early amateur excavations in the 1890s, began in earnest in the 1920s. In the early 20th century, Stockton-area amateur archaeologists J. A. Barr and E. J. Dawson separately excavated a few sites in the Central Valley and made substantial collections. Based on artifact comparisons, Barr identified what he believed were two distinct cultural traditions, an early and a late. Dawson later refined his work and classified the Central Valley sites into three "age-groups" (Schenck and Dawson 1929:402).

Professional or academic-sponsored archaeological investigations in central California began in the 1930s, when J. Lillard and W. Purves of Sacramento Junior College formed a field school and conducted excavations throughout the Sacramento Delta area. By seriating artifacts and mortuary traditions, they identified a three-phase sequence similar to Dawson's, including Early, Intermediate, and Recent cultures (Lillard and Purves 1936). This scheme went through several permutations, including Early, Transitional, and Late Periods (Lillard et al. 1939) and Early, Middle, and Late Horizons (Heizer and Fenenga 1939). In 1948 and again in 1954, Richard Beardsley refined this system and extended it to include the region of San Francisco Bay (Beardsley 1948, 1954). The resulting scheme came to be known as the Central California Taxonomic System (CCTS) (Fredrickson 1973; Hughes 1994:1). Subsequently, the CCTS system of Early, Middle, and Late Horizons was applied widely to site dating and taxonomy throughout central California. This system focused on the archaeology of the Delta region, with its more established tradition of archaeological investigations of rich archaeological sites, to set the standard by which other regions were assessed. Resulting explanations of regional prehistory and culture change tended to place the Delta as the earlier center for interaction, change, and development, with the Bay Area following on a separate, somewhat different path.

As more data were acquired through continued fieldwork, local exceptions to the CCTS were discovered. The accumulation of these exceptions, coupled with the development of radiocarbon dating in the 1950s and obsidian hydration analysis in the 1970s, opened up the possibility of dating deposits more accurately. Much of the subsequent archaeological investigation in central California focused on the creation and refinement of local versions of the CCTS.

Citing limitations with the existing classificatory schemes, Ragir (1972) adopted a new set of terms for describing archaeological cultures based on their localities. Around this same time, a series of workshops was convened to discuss concerns in California archaeology, including revisions to the CCTS (Fredrickson 1973:88-91). In his doctoral dissertation, Fredrickson (1973) reviewed the state of archaeology in California. Adopting some of the revisions agreed upon at the workshops as well as incorporating modifications employed by Ragir and Bennyhoff, Fredrickson (1973) suggested an alternative way of classifying the prehistory of California. Fredrickson (1973:113-114) proposed four "major chronological periods" in prehistoric California: the Early Lithic Period (described as hypothetical), a Paleoindian Period, an Archaic Period, and an Emergent Period. The Archaic and Emergent Periods were further divided into Upper and Lower periods. Subsequently, Fredrickson (1974, 1994) revised the findings and concepts discussed in his doctoral dissertation, further subdividing the Archaic into Lower, Middle, and Upper.

A series of "patterns," emphasizing culture rather than temporal periods, can be identified throughout California prehistory. Fredrickson (1973:7-8) defines a pattern as:

> [An] adaptive mode(s) extending across one or more regions, characterized by particular technological skills and devices, particular economic modes, including participation in trade networks and practices surrounding wealth, and by particular mortuary and ceremonial practices.

In addition, following Ragir, Fredrickson (1973:123) proposed that the nomenclature for each pattern relate to the location at which it was first identified, such as the Windmiller, Berkeley, and Augustine Patterns (see below for descriptions).

Various modifications of the CCTS (e.g., Bennyhoff and Hughes 1987; Fredrickson 1973, 1974; Milliken and Bennyhoff 1993) sustain and extend the system's usefulness for organizing our understanding of local and regional prehistory in terms of time and space. The cultural patterns identified in the Bay Area that, in a general way, correspond to the CCTS scheme are the Berkeley and Augustine patterns. Dating techniques such as obsidian hydration analysis or radiometric measurements can further increase the accuracy of these assignments.

It was initially thought that a well-developed Early Period prehistoric component was not represented within the San Francisco Bay Area. It had been assumed that San Francisco Bay was a "local marginal and impoverished manifestation of cultural succession or development in the Sacramento-San Joaquin Delta region," where a thriving Windmiller culture had been identified, which was "explainable in terms of local ecological adjustments over a period of three to four thousand years" (Gerow with Force 1968:10 summarizing Heizer 1964).

However, Bert Gerow of Stanford University, in his work at the University Village site in the 1950s, established the idea that the Bay Area represented a separate center of cultural interaction, change, and development (Gerow with Force 1968). The work undertaken by Gerow at the University Village site (CA-SMA-77) in San Mateo County indicated that a distinct Early Bay period preceded the arrival of the Middle Horizon, Berkeley Pattern. These conclusions were supported by radiocarbon dates derived from charcoal found in association with burials at the site. The burials were dated from 1500 to 1000 B.C. and were markedly older than any other published site in the Bay Area at that time. Results of obsidian hydration analysis were in accord with this date range (Gerow with Force 1968:7-8).

Comparing characteristics of the Early Bay period to those of the Windmiller pattern and Beardsley's Sacramento Valley Middle Horizon, Gerow (Gerow with Force 1968:109-110) noted the following trends. In the Early Bay period, burials tend to be flexed and lack patterned orientation or position, in contrast to Windmiller burials that tend to be in extended positions with patterned orientation. There is a high occurrence of red ochre in relation to ornamental artifacts manufactured of bone, marine shell, and stone. Whole *Olivella* shell is more common than drilled shell fractions. Quartz crystals, plummet-shaped charmstones and artifacts manufactured from mica or slate are either rare or absent. Flaked and core tools are more common than projectile points, which are relatively rare. Stone net-sinkers are found in this period, and composite fishhooks or fish spears are rare or absent. There is a relative abundance of bone awls, antler wedges or end-scrapers, scapula and rib side-scrapers, flat-ended pestles and unshaped cobblestone mortars.

Gerow (Gerow with Force 1968) noted that there were similarities between the Early Bay period components and those of later periods, but observed that changing trends included more intensive exploitation of food resources, a decrease in the amount of powdered red ochre included in graves, more elaborate shell, stone and bone artifacts, an increase in the number of obsidian and projectile points and a concomitant decrease in the number of flake and core tools, an increase in the amount of cylindrically shaped mortars and longer pestles, a decrease in the number of edge-notched stone sinkers, and an increase in stature and variations in cranial indices (Gerow with Force 1968:124).

According to Breschini (1983), Gerow's hypotheses were largely ignored by the archaeological community throughout the next two decades. Alternative explanations have subsequently been suggested such as Moratto's (1984:279) hypothesis that the "University Village complex is an expression of the Sur Pattern strongly influenced by the Berkeley Pattern."

The Early Berkeley Pattern has been dated from at least 3000 B.C. in the east San Francisco Bay (e.g., Alameda County, where the earliest Early Berkeley sites appear) (Hughes 1994), with the number of sites increasing through A.D. 1 (Moratto 1984:282). Late Berkeley Pattern (500 B.C. - A.D. 1000) sites are much more common and well documented, and, therefore, better understood than the Early Berkeley Pattern sites. Berkeley Pattern sites are scattered in more diverse environmental settings, but riverine settings are prevalent.

It is during this period that the Bay Area shellmounds were inhabited (Lightfoot and Luby 2002), and deeply stratified shellmound deposits that developed over generations of occupation are common to Berkeley Pattern sites. The typical body position for burials is tightly flexed, with no consistent orientation. Associated grave goods are much less frequent than is encountered in sites of other periods. The sites contain numerous mortars and pestles. Projectile points in this pattern become progressively smaller and lighter over time, culminating in the introduction of the bow and arrow during the Late Period. Wiberg (1997:10) claims that large obsidian lanceolate projectile points or blades are unique to the Berkeley Pattern. *Olivella* shell beads include saddle and saucer types. *Haliotis* pendants and ornaments are occasionally found. Slate pendants, steatite beads, stone tubes, and ear ornaments are unique to Berkeley Pattern sites (Fredrickson 1973:125–126; Moratto 1984:278–279). Evidence of warfare or interpersonal violence is present, including cranial trauma, parry fractures, and embedded projectile points (Milliken et al. 2007:113-114).

The Augustine Pattern coincides with the Late Period, ranging from as early as A.D. 700 to about A.D. 1800. Intensive fishing, hunting, and gathering (especially of acorns) typify this period, as well as a large population increase, expanded trade and exchange networks, increased ceremonialism, and the practice of cremation, in addition to flexed burials. Certain artifacts are also distinctive in this pattern: bone awls used in basketry, small notched and serrated projectile points that are indicative of bow-and-arrow usage, clay effigies, bone whistles, stone pipes, and occasional pottery. *Olivella* beads and *Haliotis* ornaments increase in number of types and frequency of occurrence, sometimes numbering in the hundreds in single burials. Beginning in the last quarter of the 18th century, the Augustine Pattern was disrupted by the Spanish explorers and the mission system (Moratto 1984:283).

Most recently, Milliken et al. (2007:99-123) developed what they term a "hybrid system" for the San Francisco Bay Area, combining the Early-Middle-Late Period temporal sequence with the pattern-aspect-phase cultural sequence. Following Fredrickson, Milliken et al. (2007:103) define *patterns* as "units of culture marked by distinct underlying economic modes, technological adaptations, and ceremonial practices." The a*spect* is defined as a local variation in a major economic pattern, with a sequence of phases within a particular district representing an aspect. Following Willey and Phillips (1958), phases represent the smallest units of related site components "spatially limited to the order of magnitude of a locality or region and chronologically limited to a relatively brief interval of time" (Milliken et al. 2007:103).

Dating of the cultural patterns, aspects, and phases was based on Dating Scheme D of the CCTS, developed by Groza (2002). Groza directly dated over 100 *Olivella* shell beads, obtaining a series of AMS radiocarbon dates representing shell bead horizons. The new chronology she developed has moved several shell bead horizons as much as 200 years forward in time. Milliken et al. (2007:105) use the term *bead horizon* to represent "the short time periods marked by trade of particular bead types across wide areas of central California, in order to clearly separate units of time and units of culture."

Milliken et al.'s (2007) San Francisco Bay Area Cultural Sequence includes:

- Early Holocene (Lower Archaic1) from 8000 to 3500 B.C.
- Early Period (Middle Archaic) from 3500 to 500 B.C
- Lower Middle Period (Initial Upper Archaic) from 500 B.C. to A.D. 430
- Upper Middle Period (Late Upper Archaic) from A.D. 430 to 1050
- Initial Late Period (Lower Emergent) from A.D. 1050 to 1550
- Terminal Late Period, post-A.D. 1550

There is no discussion of pre-8000 B.C., as no archaeological evidence dating to this early time period has been located in the Bay Area. Milliken et al. (2007) posit that this dearth of archaeological material may be related to subsequent environmental changes that submerged sites, buried sites beneath alluvial deposits, or destroyed sites through stream erosion. A summary of the approach presented by Milliken et al. (2007) follows.

A "generalized mobile forager" pattern marked by the use of milling slabs and handstones and the manufacture of large, wide-stemmed and leaf-shaped projectile points emerged around the periphery of the Bay Area during the Early Holocene Period (8000 to 3500 B.C.). No occupation sites dating to this early period have been found near the Project area in the South Bay.

Beginning around 3500 B.C., evidence of sedentism, interpreted to signify a regional symbolic integration of peoples, and increased regional trade, emerges in the form of new ground stone technology and the introduction of cut-shell beads into burial contexts (Milliken et al. 2007:114). This Early Period lasted until ca. 500 B.C. The earliest mortar and pestles found so far date to post-4000 B.C., with wood mortars dating to 3800 B.C. found in the vicinity of the Los Vaqueros reservoir. By 1500 B.C., mortars and pestles replaced milling slabs and handstones at some East Bay sites. Sedentism or semi-sedentism is in evidence in the East Bay during this period in the form of burial complexes with associated ornamental grave goods, such as were found at West Berkeley, Ellis Landing, and Pacheco shellmounds, and house floors with postholes, as have been found at the Rossmoor site near Walnut Creek (Milliken et al. 2007:115; Price et al. 2006).

Milliken et al. (2007:115) identify "a major disruption in symbolic integration systems" circa 500 B.C., marking the beginning of the Lower Middle Period (500 B.C. to A.D. 430). Changes included the disappearance of rectangular shell beads and introduction of split-beveled and small saucer *Olivella* beads (inferred to represent some of the earliest religious artifacts), which appear around the Early/Middle Transition bead horizon. However, spire-lopped *Olivella* beads continued to be the most common bead type in mortuary contexts. Bead Horizon M1, dating from 200 B.C. to A.D. 430, is described by Milliken et al. (2007:115) as marking a 'cultural climax' within the San Francisco Bay Area. New developments included the introduction of circular *Haliotis* ornaments and the proliferation of *Olivella* saucer beads.

---

1 The corresponding periods based on Fredrickson's Paleoindian, Archaic and Emergent classification system are provided in parentheses.

New bone tools and ornaments are also manufactured in this period, such as tubes and whistles, barbless fish spears, and elk femur spatulae. In the Central and North Bay areas, awls of bone with shouldered tips indicate basketry manufacture. Within the Central Bay, mortars and pestles continued to be used exclusively, while both milling slabs and mortars were used around the margins. Net sinkers ceased to be used at most sites around the Bay but continued to be used at CA-SFR-112, which is located within the South of Market area in San Francisco (Milliken et al. 2007:115).

The Upper Middle Period (A.D. 430 to 1050) is marked by the collapse of the *Olivella* saucer bead trade in central California, abandonment of many Bead Horizon M1 sites, an increase in the occurrence of sea otter bones in those sites that were not abandoned, and the spread of the extended burial mortuary pattern characteristic of the Meganos complex into the interior East Bay. Bead Horizons M2, M3, and M4 were identified within this period (Milliken et al. 2007:116). Bead Horizon M2a is marked by the replacement of *Olivella* saucer beads in burial contexts with "rough-edged full saddle *Olivella* beads with remarkably small perforations" (Milliken et al. 2007:116). Bead Horizon M2b is characterized by mixed *Olivella* saddle beads dating from A.D. 430 to 600. The Meganos burial pattern continued to spread westward, although it did not extend as far as the West or North Bay, and therefore not into the northern San Francisco Peninsula. Within the Central Bay, artifacts such as extremely well-crafted "show" blades, mica ornaments, fishtail charmstones and a variety of *Haliotis* ornament forms appear during Bead Horizons M2a and M2b.

The Initial Late Period, dating from A.D. 1050 to 1550, is characterized by increased manufacture of status objects. In lowland, central California during this period, Fredrickson (1973 and 1994, quoted in Milliken et al. 2007:116) noted evidence for increased sedentism, the development of ceremonial integration, and status ascription. The beginning of the Late Period (ca. A.D. 1000) is marked by the Middle/Late Transition bead horizon. Well-fashioned "show" mortars, new *Olivella* bead forms, and a variety of *Haliotis* ornaments with multiperforated and bar-scored forms appear during this period. These new artifact forms are reflective of the beginning of the Augustine Pattern, while those features of the classic Augustine Pattern, such as the arrow, banjo effigy ornaments, the flanged pipe, and *Olivella* callus cup beads, appear during Bead Horizon L1 (post-A.D. 1250). Coincident with the introduction of the bow and arrow, Napa Valley obsidian manufacturing debitage increased markedly in the interior East Bay, while there was a striking decrease in biface manufacture and debitage at Napa Valley Glass Mountain quarries. In the South Bay, however, local Franciscan chert continued to be used and completed obsidian projectile points were traded in from the north. Social stratification is evident in the introduction or, in some areas, reintroduction of partial cremations with high-status grave goods. In addition, the variety of status goods included in interments and in association with cremations of high-status individuals increased (Milliken et al. 2007:117).

Olivella sequin and cup beads, characteristic of the L1 Bead Horizon, disappear circa A.D. 1500 to 1550, marking the beginning of the Terminal Late Period. Clamshell disk beads, indicative of the L2 Bead Horizon, were traded across the North Bay during this period, although there is no evidence that they spread south of the Carquinez Strait at this time. The earliest clamshell disks south of the Carquinez Strait date to A.D. 1670 in Contra Costa County. Sometime between A.D. 1500 and 1650, fewer beads appear as grave goods, and only *Olivella* lipped and spire-lopped beads appear in South Bay and Central Bay interments. Milliken et al. (2007:117) note that material of the L2 Bead Horizon tends to occur as a thin lens atop rich midden material of the L1 Bead Horizon. Other changes occurred around the San Francisco Bay Area during this period. Clamshell disk beads, magnetite tube beads, the toggle harpoon, hopper mortars, plain, corner-notched, arrow-sized, projectile points, and secondary cremation initially appear in the North Bay during the Terminal Late Period. The hopper mortar did not extend into the Central or

South Bay, although plain, corner-notched, projectile points did begin appearing in the Central Bay. Desert side-notched points spread from the Central Coast into the South Bay (Milliken et al. 2007:117).

3.3 ETHNOGRAHIC SETTING

There is a considerable body of ethnographic literature about the Native American inhabitants of the region in which the Project is located. This section provides a brief summary of that ethnography and is intended to provide a general background only. For a more extensive review of Ohlone ethnography, see Bocek (1986); Cambra et al. (1996); Kroeber (1925); Levy (1978); Milliken (1983); and Shoup et al. (1995).

The Project area lies within the region occupied by the Ohlone or Costanoan group of Native Americans at the time of historic contact with Europeans (Kroeber 1925:462-473). Although the term Costanoan is derived from the Spanish word *Costaños*, or "coast people," its application as a means of identifying this population is based in linguistics. The Costanoans spoke a language now considered one of the major subdivisions of the Miwok-Costanoan, which belonged to the Utian family within the Penutian language stock (Shipley 1978:82-84). Costanoan actually designates a family of eight languages, which were spoken by tribal groups occupying the area from the Pacific Coast to the Diablo Range, and from San Francisco to Point Sur. Modern descendants of the Costanoan prefer to be known as Ohlone. The name Ohlone is derived from the Oljon group, which occupied the San Gregorio watershed in San Mateo County (Bocek 1986:8). The two terms (Costanoan and Ohlone) are used interchangeably in much of the ethnographic literature.

Based on linguistic evidence, it has been suggested that the ancestors of the Ohlone arrived in the San Francisco Bay Area about 1,500 years ago, having moved south and west from the Sacramento-San Joaquin Delta region. The ancestral Ohlone displaced speakers of a Hokan language and were probably the producers of the artifact assemblages that constitute the Augustine pattern described above (Levy 1978:486).

Although linguistically related as a family, the eight Costanoan languages composed a continuum in which neighboring groups could probably understand each other. Beyond neighborhood boundaries, however, each group's language was unrecognizable to the other. Each of the eight language groups was subdivided into smaller village complexes or tribal groups. The groups were independent political entities, each occupying specific territories. Access to the natural resources of the territories was controlled by each group. Although each group had one or more permanent villages, their territory contained numerous smaller camp sites used as needed during a seasonal round of resource exploitation.

Leadership was provided by a chief. The chief, who could be either a man or a woman, inherited the position patrilineally. Together, the chief and a council of elders served the community as advisers. However, the chief had special responsibility to feed visitors, to provide for the impoverished, and to direct ceremonies and hunting, fishing, and gathering activities. Only in times of warfare was the chief's role as absolute leader recognized by group members (Levy 1978:487).

Extended families lived in domed structures thatched with tule, grass, wild alfalfa, or ferns (Levy 1978:492). Semisubterranean sweat houses were built into pits excavated next to stream banks and covered with a structure. The tule raft, propelled by double-bladed paddles similar to those that were used in the Santa Barbara Channel Island region, was used to navigate across San Francisco Bay (Kroeber 1925:468).

Mussels were an important staple in the Ohlone diet as were acorns of the coast live oak, valley oak, tanbark oak, and California black oak. Seeds and berries, roots and grasses, as well as the meat of deer, elk, grizzly, rabbit, and squirrel formed the Ohlone diet. Careful management of the land through controlled burning served to insure a plentiful and reliable source of all these foods (Levy 1978:491).

The Ohlone usually cremated a corpse immediately upon death, but the body was interred if there were no relatives to gather wood for the funeral pyre. Mortuary goods comprised most of the personal belongings of the deceased (Levy 1978:490).

The arrival of the Spanish in the San Francisco Bay Area led to a rapid and major reduction in native California populations. Diseases, declining birth rates, and the effects of the mission system served to largely eradicate their traditional lifeways (which are currently experiencing resurgence among Ohlone descendants). Brought into the missions, the surviving Ohlone, along with former neighboring groups of Esselen, Yokuts, and Miwok, were transformed from hunters and gatherers into agricultural laborers (Levy 1978; Shoup et al. 1995). With the secularization of the mission system by an independent Mexico in the 1830s, numerous ranchos were established. Generally, the few Indians who remained were then forced, by necessity, to work on the ranchos.

Today, descendants of the Ohlone live throughout the Bay Area. Several Ohlone groups (e.g., Muwekma, Amah) have banded together to seek federal recognition. Many Ohlone, both as individuals and as groups, are active in preserving and reviving elements of their traditional culture, such as dance, basketry, and song, and are active participants in the monitoring and excavation of archaeological sites.

3.4 HISTORICAL SETTING

This section of the report summarizes information regarding the historic context of the Project area. Overarching historic themes were identified to establish a historic context within which to evaluate historic-period period properties within the Project area. These themes include the history of Santa Clara Valley, the history of Silicon Valley, and site specific history of the Project area.

3.4.1 History of Santa Clara Valley

The 1769 expedition led by Captain Gaspar de Portola initiated the period of contact between Spanish colonists and the native people of the Santa Clara Valley. The Portola party reached the Santa Clara Valley in the fall of that year, camping on San Francisquito Creek. A year later, Pedro Fages led an expedition that explored the eastern shore of San Francisco Bay, eventually reaching the location of modern-day Fremont, where they traded with the local native people. In 1772, a second Fages expedition traveled from Monterey passing through the Santa Clara Valley (Fages 1972, Levy 1978).

In 1774, Captain Fernando Rivera y Moncada, scouting locations for a mission and military installment, encountered local Indian people in the Santa Clara Valley. In 1776, a mission scouting expedition under the leadership of Juan Bautista de Anza and Friar Pedro Font traveled through the same area and traded with residents of native villages encountered along the way. Font recorded that the party had observed 100 native people while traveling through the Santa Clara Valley (Font 1930, Shoup et al. 1995).

The first mission in the San Francisco Bay Area was established in San Francisco with the completion of Mission San Francisco de Asis (Mission Dolores) in 1776. Mission Santa Clara de Asis followed in 1777, and Mission San José in 1797. The missions relied on the Native American population both as their source of Christian converts and their primary source of labor. Diseases introduced by the early expeditions and missionaries, and the contagions associated with the forced communal life at the missions, resulted in the death of many local peoples. Cook (1943) estimates that by 1832, the Ohlone population had been reduced from a high of over 10,000 in 1770 to less than 2,000.

Mission Santa Clara, founded in 1777, controlled much of the land of the Santa Clara Valley (approximately 80,000 acres) until the 1830s. Mission lands were used primarily for the cultivation of wheat, corn, peas, beans, hemp, flax, and linseed, and for grazing cattle, horses, sheep, pigs, goats, and mules. In addition, mission lands were used for growing garden vegetables and orchard trees such as peaches, apricots, apples, pears, and figs.

Within a period of 25 years after the founding of Mission Santa Clara, most local native peoples had been affected by the presence of the missionaries. Though some Indians gave up their traditional way of life by choice, many were coerced, manipulated, and forced to the mission. By the mid-1790s, the traditional Ohlone economy had been significantly disrupted. Native populations outside the Mission had suffered losses to Spanish disease, a decline in food resources, a disrupted trade system, and a significant drought in 1794 (Shoup et al. 1995). Mission records of 1794 and 1795 show that 586 Native Indians were baptized. While earlier baptisms were composed primarily of children, 80 percent of the converts during this period were adults. The independent tribal elders had finally been brought into the mission system.

The next several decades represent a time of relative stability throughout the Santa Clara Valley. During this period, the Spanish and Mexican population outside of the Mission grew in numbers, power, and prosperity, and Mexico, having gained its independence from Spain, began administering the 21 California missions. By the 1820s, when American trappers began exploring the region, Indians of the San José and Santa Clara missions began to rebel (Shoup et al 1995). The rebellion was led by Indian chieftain Estanislao and his companion Cipriano, and the confrontations that took place in the summer of 1829 resulted in casualties for both the Indian rebels and the soldiers serving the mission (Shoup et al. 1995). The fact that Indian people who had maintained long-term relationships with local missions were motivated to rebel against them reflected poorly on the institution’s success and signaled the beginning of the final chapter in Mission Santa Clara’s long existence (Shoup et al. 1995).

The Mexican government began the process of secularizing mission lands in the 1830s. The secularization of the mission lands was decreed in 1834, but the process did not get underway at Santa Clara until 1837. Within a few years, the lands of all 21 missions were expropriated in the form of land grants. Despite regulations that stipulated that the land grants were to be distributed fairly, recipients of the land grants were primarily *Californios* who had allied themselves with José Ramon Estrada, Governor Juan Bautista Alvarado’s brother-in-law, who oversaw the process (Shoup et al. 1995). By 1845, eight land grants of the former Mission Santa Clara lands were formally awarded to *Californios* and their Anglo allies (54,284 acres); four were awarded to Mission Indians (11,917 acres) (Shoup et al. 1995).

With their victory in the Mexican-American War (1846-1848), the United States took possession of California and Anglo-European settlers began to arrive in the Santa Clara Valley. The 1849 Gold Rush brought an unprecedented wave of settlers, many of whom acquired land and turned their attention to agriculture. In November of 1849, San José became the first capital of the State of California. The following decades were marked by a transition from the ranching economy favored by Spanish and Mexican landholders to an economy based at first on grain agriculture, such as wheat, then increasingly on orchard and specialty vegetable agriculture.

In the 1850's the hamlet of Santa Clara began to take shape as a recognizable small town. William Campbell surveyed the town site into lots one hundred yards square, and one lot was given to each citizen with the understanding that he was to build a house on it within three months or lose the property. A schoolhouse and a church were built, several hotels erected, mercantile businesses established, and 23 houses were imported from Boston to be set up in the town. In 1851, Santa Clara University, was founded on the site of the Santa Clara de Asiss Mission (City of Santa Clara 2010:2).

In 1851, Santa Clara College was established on the old mission site and became a prominent feature of the developing town. Santa Clara incorporated as a town on July 5, 1852 and became a state-chartered city in 1862. By this time the city encompassed an area two miles long and one and a half miles wide. Outside city limits, small family farms and orchards developed and thrived in testimony to the area's fertile soil and mild climate. As the town grew, it was supported by a variety of manufacturing, seed, and fruit industries. The immediate vicinity around Santa Clara became famous for its acre-upon-acre of flower and vegetable seed farms. In 1869, the Western Pacific Railroad completed a rail line from San José to Niles connecting San José with the Transcontinental Railroad. This new line opened additional markets for the agricultural and manufactured products throughout the Santa Clara Valley.

As the 19th century ended, more and more people arrived seeking the mild climate and job opportunities of the Santa Clara area. By 1906, the population of the city had grown to nearly 5,000 (City of Santa Clara 2019). The population remained stable and did not increase greatly until after World War II when the city outgrew its 19th century boundaries and expanded to open lands north and west of the original city limits, replacing farms and orchards with suburban and high-tech development (City of Santa Clara 2019).

3.4.2 History of Silicon Valley

The root of the transformation of the Santa Clara Valley from a center of agriculture to a center of technology can be traced to Frederick E. Terman. After receiving his Ph.D from the Massachusetts Institute of Technology in 1924, Frederick E. Terman accepted a faculty position at Stanford's electrical engineering department. Terman set out to build Stanford into a major center of radio and communications research. He also encouraged students such as William Hewlett and David Packard (of the Hewlett-Packard Company) and Eugene Litton (of Litton Industries, Inc.) to establish local companies, many of which he personally invested in. After the World War II Terman was intent on transforming Stanford into a West Coast MIT. To accomplish this goal, he selected technologies for research emphasis, beginning with microwave electronics. Second, he solicited military contracts to fund academic research by faculty members who had worked in microwave technology during the war. By 1949 Stanford had become one of the top three recipients of government research contracts, overshadowing all other electronics departments west of the Mississippi River (Dennis 1999).

In 1951 Terman spearheaded the creation of the Stanford Industrial (now Research) Park, which granted long-term leases on university land exclusively to high-technology firms. Soon Varian Associates, Inc. (now Varian Medical Systems, Inc.), Eastman Kodak Company, General Electric Company, Admiral Corporation, Lockheed Corporation (now Lockheed Martin Corporation), Hewlett-Packard Company, and others turned Stanford Research Park into America's premier high-technology manufacturing region. As more firms moved to the region, fueling demand for basic electronic components, technical skills, and business supplies, many former high-technology employees started their own companies (Dennis 1999).

In 1956 William Shockley, Nobel Prize-winning coinventor of the transistor, established the Shockley Semiconductor Laboratory at Stanford Industrial Park. Within a year. a group of engineers resigned to establish Fairchild Semiconductor Corporation in Santa Clara, expanding Silicon Valley beyond the Stanford area (Dennis 1999). At the time, Santa Clara was largely comprised of orchards. With the development of the semiconductor chip a technology boom occurred in the valley, displacing the agricultural economy of Santa Clara. By 1990, the city covered 19.3 square miles and had a population of more than 93,000. (City of Santa Clara 2019).

The late 1960s and early 1970s saw a fundamental change in the semiconductor market. By 1972 the U.S. military accounted for only 12 percent of semiconductor sales, compared with more than 50 percent during the early 1960s. With the growth in consumer applications, by the mid-1970s venture capitalists had replaced the U.S. government as the primary source of financing for start-ups (Dennis 1999).

3.4.3 Site Specific History

The following historic context was largely excerpted from the report entitled *237 Industrial Center (Cilker Family Properties) Historic Report* (Maggi 2016) supplemented with additional material by PaleoWest.

The Project area is located near the community of Alviso and north of San José's Rincon de los Esteros Redevelopment Area. Based on a review of historic aerials and USGS maps, the area has historically been used primarily for agriculture. The Project area was first utilized for agriculture in the late 1860s or early 1870s when a portion of the land was acquired by William Boots following the patent of an 1845 acres portion of the Rincón de los Esteros rancho of Francisco Berryessa et al in 1873. The Spanish phrase refers to "Estuaries Bend," probably referring to the large bend in the Coyote Creek just south of Highway 237. The rancho had been initially granted to Ygnacio Alviso in 1838 and was patented by the United States Land Commission to three claimants.

By 1876, Boots had put together a large holding of over 400 acres north and south of the road between Alviso and Milpitas. Later expanding to around 640 acres, Boots built his house south of the road just west of the Coyote Creek bend at the site of today's Cerone Bus Yard. He planted a small orchard surrounding his house and worked the larger farm with a variety of grazing and vegetable crops.

Williams Boots, born in Jefferson County, Ohio, in 1826, came to California in 1852 during the Gold Rush, but by late 1852 had settled in Santa Clara County. He began tenant farming on Francisco Berryessa's portion of the rancho in 1853 and began acquiring portions over the next few years while patent proceedings were underway. Boots cultivated fruit trees (plums and French Prunes), vegetables, and berries. He experimented with asparagus, and eventually had over 100 acres cultivated in this row crop. His interest in thoroughbred racing horses of English stock and graded American horses led him into the stock business, an operation which his family continued into the twentieth century. The farm was fully developed under Boots and included eleven artesian wells from 250-700 feet in depth and had numerous secondary houses and structures.

Boots married Mary E. Hough of New York in 1857, and had three surviving children; Mary, William Jr., and Charles. His wife and children continued at the ranch after his death, which occurred in April 1900. His probated will indicated that he was also owner of the site of Dashaway Stables in San José.

By 1906, William Boots' widow Mary, daughter Mary, and son Charles had conveyed the portion of the ranch north of Alviso-Milpitas Road to William Boots Jr. This portion of the ranch had buildings or structures at least as early as 1895 when the USGS first surveyed the area. Over the next few decades, as indicated in census enumerations, the farms along this road provided housing to large groups of agricultural workers who were employed in the large fields surrounding Alviso.

William Boots Jr., who had by then relocated to Oakland with his wife, owned the property at least until 1913. That year he subdivided and sold a portion of the farm to Victoriano Silveira that now is the site of the Los Esteros Energy Center. Sometime before 1922, he appears to have sold the remaining property to brothers Newton and Edgar Jackson. In a 1927 deed, Boots conveyed to the Jacksons his easement to the Coyote Creek channel that had been condemned for public use by the County of Santa Clara in 1875. Neither Newton or Edgar Jackson are known to have lived on the property prior to Edgar and Gussie Jackson first appearing in a Polk directory in 1930. They are listed in this location, then identified with Milpitas, for the next 25 years. By 1943, Newton Jackson appears to have quitclaimed his interest in the property.

Edgar Jackson was a farmer, entrepreneur, and community leader within the local pear industry. At the time of the purchase of the subject property, he lease-operated a ranch in Lawrence Station Road in Cupertino. His family had previously been located in Santa Clara on San Francisco Road where they operated a nursery. While living on Alviso-Milpitas Road, Jackson was president of the Santa Clara Pear Growers Association for a time and was manager of a cold storage facility. By the 1940s most of the property was planted with orchard trees, and by 1948 it was fully developed. Edgar and Gussie Jackson moved to Saratoga during the mid-1950s but continued to own the ranch until sold in the mid-1960s. Over the next decade or two the property was converted to row crops, as it existed today. The Jackson House has been a rental since the mid-1950s. The complex of buildings to the west at the center of the site have always been rentals or worker housing, and contains other structures associated with ranch operations.

The Project area was annexed to the City of San José in 2001 as a part of Lick No_27. The Los Esteros Energy Center was built around this time on the acreage that William Boots Jr. had parceled and sold the Victoriano Silveira in 1913. The Project area continued to be used primarily for agricultural purposes into the present.

4.0 CULTURAL RESOURCES INVENTORY

A literature review and records search was conducted at the NWIC, housed at Sonoma State University, in Rohnert Park, on May 23, 2019. This inventory effort included the Project area and a one-mile radius around the Project area, collectively termed the Project study area. The objective of this records search was to identify prehistoric or historical cultural resources that have been previously recorded within the Project study area during prior cultural resource investigations.

4.1 PREVIOUS CULTURAL RESOURCE INVESTIGATIONS

The records search results indicate that no less than 261 previous investigations have been conducted and documented within the Project study area since 1973 (Appendix A: Table 1 and 2). At least forty-five of the previous studies encompass portions or all of the Project area. As a result, 100 percent of the Project area has been previously investigated by these studies.

4.2 CULTURAL RESOURCES REPORTED IN THE STUDY AREA

The records search results indicated that thirty-four cultural resources have been previously recorded within the Project study area (Table 4-1). Ten prehistoric resources, two multi-component resources (prehistoric/historic), and twenty-two built resources are located within the Project study area (Table 4-2). Four built resources were recorded within the Project area and are described below in Table 4-3. Each resource is briefly described in the table below.

Table 4-1 Cultural Resources Recorded within the Project Study Area

Primary Number/ Trinomial	Resource Name	Age	Type	Recording
P-41-000409/ CA-SMA-000299	Colma Creek	Prehistoric	Site	1989 (Barb Bocek, Stanford University); 1994 (Carolyn Rice)
P-41-000495/ CA-SMA-000355	Colma Creek/Chestnut	Prehistoric	Site	2000 (Matthew R. Clark, Holman & Associates)
P-43-000025/ CA-SCL-000005	Nelson 339	Prehistoric	Site	1912 (Loud); 1984 (Basin Research); 2012 (Jack Meyer, Jennifer Thomas, FWARG)
P-43-000026/ CA-SCL-000006	Marcello's Enclosure	Prehistoric	Site	1912 (Loud, University of California); 1980 (Morris, Johnson, Cabrillo College)
P-43-000277/ CA-SCL-000268/H	4-SCL-268	Prehistoric, Historic	Site	1976 (ACRS); 1978 (Dietz); 1980 (Morris, Fenenga, Johnson, Cabrillo College)
P-43-000448/ CA-SCL-000447/H	formerly known as CA-SCL-6E	Prehistoric, Historic	Site	1980 (C. Desgrandchamp, D. Chavez)
P-43-000486/ CA-SCL-000485	[none]	Prehistoric	Site	1982 (Cartier, Archaeological Resource Management)

P-43-000529/ CA-SCL-000528	Nolte #1	Prehistoric	Site	1983 (P.M. Ogrey, R. M. Harmon, Basin Research Associates, Inc.); 1983 (R.S. Wiberg, M. R. Clark, Holman & Associates); 2010 (J. Grant, A. Reynolds, ICF International); 2015 (H. Koenig, ESA)
P-43-000623/ CA-SCL-000675	"Coyote Creek Site"	Prehistoric	Site	1989 (Robert Cartier, Archaeological Resource Management)
P-43-000624/ CA-SCL-000677	The 237/880 Site	Prehistoric	Site	1989 (R. Cartier, Archaeological Resource Management); 1995 (John Holson, Pacific Legacy); 2015 (Phil Kaijankoski, FWARG); 2016 (Eric Wohlgemuth, FWARG)
P-43-001060/ CA-SCL-000678	ARCO Burials	Prehistoric	Site	1989 (A. Banet, M. Fong, M. Tannam, Basin Research Associates)
P-43-003145	EB6 Oyster Shell	Prehistoric	Site	2015 (N. Scher, Far Western Anthropological Research Group, Inc.)

Table 4-2 Built Resources Recorded within the Project Study Area

Primary Number/ Trinomial	Resource Name	Address	Recording	Eligibility
P-43-002687	Murphy Ranch	1500 Barber Lane	1986 (Michael Corbett)	3S (recommended eligible based on survey)
P-43-003504	Magnolia Drive	Magnolia Drive (no address)	1989 (Glory Anne Laffey, ARM)	6Z(not eligible)
P-43-003537	Barber Lane	Barber Lane (no address)	1984 (Gregory King, Caltrans 04)	6Z(not eligible)
P-43-003538	Barber Lane	Barber Lane (no address)	1984 (Gregory King, Caltrans 04)	6Z(not eligible)
P-43-003548	Elmwood Rehabilitation Center	701 S. Abel Street	1984 (Gregory King, Caltrans 04)	6Z(not eligible)
P-43-003582	A & T Farms	783 Milpitas – Alviso Road	1985 (Gregory King, Caltrans)	6Z(not eligible)
P-43-003587	Fruit Stand; Alviso-Milpitas Road	Alviso – Milpitas Road (no address)	1985 (Gregory King, Caltrans)	6Z(not eligible)
P-43-003590	Milpitas Terminal Station; #30	Alviso – Milpitas Road (no address)	1985 (Gregory King, Caltrans, District 4)	6Z(not eligible)
P-43-003593	Oakcrest Estates; #17	4271 North First Street	1985 (Gregory King, Caltrans, District 4)	6Z(not eligible)
P-43-003594	On Milpitas-Alviso Road (east end); #27	Milpitas Alviso Road (east end)	1985 (Gregory King, Caltrans, District 4)	6Z(not eligible)
P-43-003595	On Milpitas-Alviso Road (east end); #28	Milpitas Alviso Road (east end)	1985 (Gregory King, Caltrans, District 4)	6Z(not eligible)

P-43-003596	On Milpitas-Alviso Road (east portion); #29	Milpitas Alviso Road (east end)	1985 (Gregory King, Caltrans, District 4)	6Z(not eligible)
P-43-003599	San José Industrial Park; #19	Northeast Corner of First Street and Hwy 237	1985 (Gregory King, Caltrans)	6Z(not eligible)
P-43-003600	Santa Clara County Transit Operations; #21	3990 Zanker Road	1985 (Gregory King, Caltrans)	6Z(not eligible)
P-43-003601	Shell Service Station; #32	Hwy 237 near Barber Lane	1985 (Gregory King, Caltrans, District 4)	6Z(not eligible)
P-43-003602	Summerset Estates; #16	Horizon Circle	1985 (Gregory King, Caltrans, District 4)	6Z(not eligible)
P-43-003603	Sutter's Card Lounge; #18	Hwy 237 and North First Street	1985 (Gregory King, Caltrans)	6Z(not eligible)
P-43-003606	Alviso-Milpitas Road; #20	Alviso – Milpitas Road (no address)	1985 (Gregory King, Caltrans)	6Z(not eligible)
P-43-003723	Barber Lane Fire Station	775 Barber Lane	1989 (Glory Anne Laffey, ARM)	6Z(not eligible)
P-43-003724	Agnews Buildings 352B and 352C	Boots Road	1989 (Glory Anne Laffey, ARM)	6Z(not eligible)
P-43-003725	William Erkson House	3544 N. First Street	1997 (Glory Anne Laffey, Archives & Architecture)	6ZS (not eligible)
P-43-003879	San José-Santa Clara Regional Wastewater Facility Streamline Moderne Industrial Historic District	700 Los Esteros Road	2016 (Brad Brewster, ESA)	3D (recommended eligible)

Table 4-3 Cultural Resources Recorded within the Project Area

Primary No.	Resource Name	Type	Age	Recorder
P-43-003578	1591 Alviso – Milpitas Road	Building	Historic	King 1985
P-43-003579	1625 Alviso – Milpitas Road	Building	Historic	King 1985
P-43-003585	1657 Alviso – Milpitas Road	Building	Historic	King 1985
P-43-003605	1515 Alviso – Milpitas Road	Building	Historic	King 1985

4.3 ADDITIONAL SOURCES

Additional sources consulted during the cultural resource literature review and records search include the National Register of Historic Places, the Office of Historic Preservation Archaeological Determinations of Eligibility, and the Office of Historic Preservation Directory of Properties in the Historic Property Data File. There are no listed historic properties, historical resources, or historic landmarks recorded within the Project area.

Two sites, P-43-000448/CA-SCL-000447/H and P-43-000624/CA-SCL-000677 within the Project study area are listed on the Archaeological Determinations of Eligibility. P-43-000448 was determined eligible for the National Register of Historic Places (NRHP) by the Keeper and is also listed in the CRHR. P-43-000624 was determined to be ineligible for the National Register of Historic Places (6Y).

PaleoWest reviewed several historical USGS maps including the San José, CA (1889, 1947, 1953a) and the Milpitas, CA (1961, 1968, 1973, 1980) quadrangles. Based on a review of historical USGS maps, the Project area was settled as early as 1889 with buildings, likely associated with farming, and roads in the surrounding area (USGS 1889). Between 1889 and 1953 depictions of the Project area on USGS changed little; however, the 1953 USGS map depicts the Project area as farmland being primarily used as an orchard (USGS 1947, 1953b). Two additional buildings are depicted on the USGS map for 1973 that were not depicted in the 1961 and 1968 maps (USGS 1961, 1968, 1973). The Project area continued to be shown as orchard land in the 1980 USGS map (USGS 1980).

4.4 NATIVE AMERICAN COORDINATION

PaleoWest contacted the NAHC, as part of the cultural resource assessment, on May 29, 2019, for a review of the SLF. The objective of the SLF search was to determine if the NAHC had any knowledge of Native American cultural resources (e.g., traditional use or gathering area, place of religious or sacred activity, etc.) within the immediate vicinity of the Project area. The NAHC responded with a letter dated June 17, 2019 stating that the SLF search "results were positive" and to please contact the North Valley Yokut Tribe for more information. The NAHC requested that five additional Native American tribal groups also be contacted to elicit information regarding cultural resource issues related to the proposed Project (Appendix B). All six tribal groups were contacted by email on July 9, 2019.

A first round of follow up phone calls was placed on July 15, 2019. As of July 16, five responses were received. Mr. Andy Galvan, of the Ohlone Indian Tribe, noted that he knew of many precontact sites in the general vicinity of the Project area and requested a copy of the records search and Project area map. The Project area map was provided to Mr. Galvan on July 16, 2019 and PaleoWest indicated that they would send over a copy of the final Phase 1 report, including the results of the records search. Mr. Valentin Lopez noted that this was outside of his traditional tribal territory and declines to comment. Ms. Irene Zwierlein requested that construction crews receive cultural resource training and that if anything is found that a Native American and an archaeological monitor be present for any additional ground disturbing activities. Ms. Ann Marie Sayers requested Native American monitor and archaeological monitor be present during any ground disturbing activities. A second follow up call was placed to Ms. Charlene Nijmeh of the Muwekma Ohlone on July 22, 2019. No response was received. A follow up email was sent as no phone message was able to be left. Copies of the Cultural Resources Technial Report were provided to Mr. Andy Galvan, the Ohlone Indian Tribe, and Kathy Perez, Northern Valley Yokuts Tribe on July 23, 2019 as requested. An example of the SLF search request letter, the list of contacts, a sample scoping letter, and a contact/response matrix are included in Appendix A.

5.0 FIELD INVESTIGATION

5.1 SURVEY FIELD METHODS

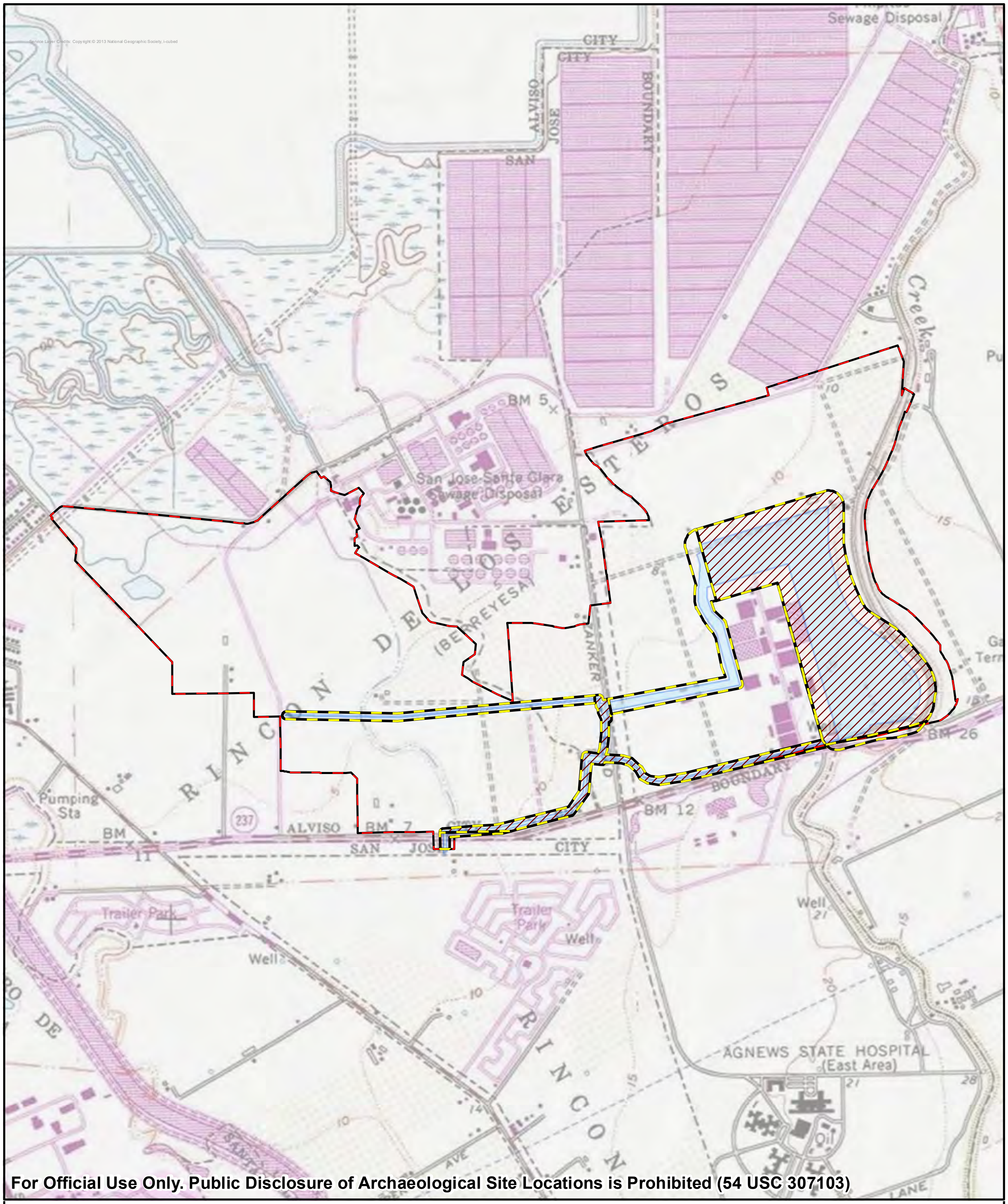
A Phase I intensive pedestrian survey of the Project area was conducted by PaleoWest archaeologist, Zack Babineau, on July 16, 2019. The pedestrian archaeological survey was conducted inclusive of the Project area, linear facility routes, and extending out no less than 200 feet around Project components and 50 feet to either side of the right-of-way of the Project linear facility routes per CEC required survey methods (Figure 1-3). The architectural history windshield survey was conducted inclusive of the Project area and a one-parcel deep buffer from the proposed plant site boundaries and along the routes of all linear facilities in order to identify, inventory, and characterize structures and districts over 45 years of age or that are considered to be significant per CEC required survey methods. Due to lack of accessibility, only the main component and the southernmost linear facility route were surveyed in their entirety.

The survey was conducted by walking parallel transects across the entirety of the Project area spaced at 10 to 15 meter (33 to 50 feet) intervals, when possible. The Project area was recorded with digital photographs for use in the report. Photographs included general views of the topography and vegetation density, and other relevant images. A photo log was maintained to include, at a minimum, photo number, date, orientation, photo description, and comments. The surveyor carefully inspected all areas likely to contain or exhibit sensitive cultural resources to ensure discovery and documentation of and visible, potentially significant cultural resources located within the Project area. In addition, the exteriors of the buildings within the Project area were analyzed, photographed, and recorded. Any building or structure determined to have been built prior to 1974 or to be potentially eligible for the CRHR or the Local Register were formally evaluated on DPR 523 series forms. The resulting forms are included as Appendix A.

Historical and prehistoric site indicators were noted where present. Historical site indicators include fence lines, ditches, standing buildings, objects or structures such as sheds, or concentrations of materials at least 45 years in age, such as domestic refuse (e.g., glass bottles, ceramics, toys, buttons or leather shoes), refuse from other pursuits such as agriculture (e.g., metal tanks, farm machinery parts, horse shoes) or structural materials (e.g., nails, glass window panes, corrugated metal, wood posts or planks, metal pipes and fittings, railroad spurs, etc.). Prehistoric site indicators include areas of darker soil with concentrations of ash, charcoal, animal bone (burned or unburned), shell, flaked stone, ground stone, pottery, or even human bone.

5.2 ARCHAEOLOGICAL SURVEY RESULTS

On July 16, 2019 PaleoWest archaeologist Zack Babineau conducted a pedestrian survey of the proposed SJC02 Project, linear facility routes/transmission line, with a 200 foot buffer around main components and a 50 foot buffer to either side of the linear facility routes. Due to lack of accessibility, only the main component and the southernmost linear facility route were able to be surveyed completely. The results of this survey are discussed below.



PALEO WEST archaeology

0 feet 2,000
0 meters 500
1:24,000

N

Figure 3
Survey Coverage Map

Lightspeed Data Center Project
Santa Clara County, CA

Project Location
Archaeological Survey Area
Architectural Survey Area
Areas Accessible for Archaeological Survey

The survey area was located within the city limits of San José in Santa Clara County, and was accessible from a gate in the fence on Alviso Milpitas Road to the south of the site. Survey was to include a large parcel with an approximate area of 600 by 1000 meters, east/west oriented linear routes, and north/south oriented linear routes. The linear routes ranged in length from 250 to 1800 meters. Ground visibility in the survey area averaged approximately 25% due to thick ground coverage. All accessible areas were intensively surveyed using 15 meter transects.

The terrain is characterized by a mechanically altered and landscaped topography located in an industrial and commercial portion of San José immediately north of Highway 237 and immediately South of the San José-Santa Clara Regional Wastewater Facility. Los Esteros Energy Center is located between the main survey block and the linear routes. The channelized Coyote Creek parallels the eastern edge of the Project area. Vegetation consists predominantly of mustard and other grasses, with some sycamores and willows in the creek bed (Appendix C: Photos 1 and 2). The soil is consistent throughout the survey area, with 10YR 5/2 grayish brown dry silty clay being predominant.

Due to its location in a commercial zone, the land within the Project area has been greatly disturbed by agriculture and development. Natural soils have been displaced by plowing and by the construction of the adjacent wastewater facility and energy center.

Main survey block

The main survey block was surveyed in two sections. The first section consists of the northern area which measures approximately 600 meters east/west and 300 meters north/south. The northern and western 50 meters of this section were not accessible due to an impassable 6 foot tall barbed wire fence (Appendix C: Photos 3 and 4). The ground surface was observed through the fence in these inaccessible areas and was comparable to the rest of the survey block. The remaining area was covered by 13 transects oriented east/west. The topography was flat, and the surface was uneven due to plowing. Waist high mustard plants covered most of this portion of the survey area. The remaining 25% of visible ground consisted of a 10YR 5/2 grayish brown dry silty clay. The southern part of this section was in a parking area for Los Esteros Energy Center. This area was free of vegetation and the ground was covered with imported gravels (Appendix C: Photo 5).

The second section consists of the southern area which measures 700 meters north/south and 480 meters east/west at the widest part to the south. This area was covered by 20 transects oriented north/south. The topography was flat, and the surface was uneven due to plowing. Waist high mustard plants covered most of this portion of the survey area. The remaining 25% of visible ground consisted of a 10YR 5/2 grayish brown dry silty clay. Four previously recorded historic era buildings were located within or partially within the survey area. Two of these sites were no longer standing, and the two remaining sites were documented for a record update (Appendix C: Photos 6-7). No new cultural resources were observed in the main survey block.

Linear Routes

The northernmost east/west linear route is approximately 1800 meters long. The easternmost north/south oriented linear route is 400 meters long. These two linear routes were also documented from a distance due to 6ft. high barbed wire fence blocking access (Appendix C: Photo 8). The ground surface of these routes was observable through the fence but could not be physically reached. Photos were taken through the fence and no historic structures were observed from a distance. Terrain and vegetation observed through the fence is comparable to the main survey block, flat and covered predominantly in mustard plants and grasses. Ground visibility was approximately 25%, with similar 10YR 5/2 grayish brown dry silty clay that was found throughout the survey area.

The southernmost east/west oriented linear route follows a portion of the Coyote Creek Recreational trail and is 1700 meter long. The easternmost north/south oriented transect follows a portion of Zanker Road and is 270 meter long. These two segments were accessible and pedestrian survey of these segments was completed in two transects each. These areas were mostly paved over, with about 10% ground visibility overall. Mustard plants and other grasses grow along the perimeter of the trail and along the road shoulder. Visible soil consisted of a 10YR 5/2 grayish brown dry silty clay.

No prehistoric or historic-period archaeological resources were identified during the survey effort.

5.3 ARCHITECTURAL HISTORY SURVEY RESULTS

5.3.1 1515 Alviso—Milpitas Road

This property, P-43-003605 was first evaluated by Caltrans District 4 in 1985 and was recommended as not eligible for the NRHP (King 1985).

PaleoWest Archaeology revisited the property on July 16, 2019 and determined that the property is no longer extant (Appendix C: Photo 6).

5.3.2 1591 Alviso—Milpitas Road

Centered along the frontage of a large agricultural site north of Highway 237, this house and related ancillary buildings serves as a residential use and farm staging area for the ranch site operated by Cilker Orchards. Mostly hidden within a massing of large shrubs and trees, the one-story National-style vernacular house was built in the nineteenth century and may have been placed on this site as early as the mid-1890s when owned by William Boots. At that time, buildings are first identified on this site on the first USGS map for this area, surveyed in 1895 and published in 1899. The farm was then 79 acres in size just outside the town of Alviso. Now 65.4 acres in size due to acreage loss to the Coyote Creek channelization, the L-shaped ranch was developed with orchards during the twentieth century and converted to row crops during the 1970s.

This property, P-43-003578, was first evaluated by Caltrans District 4 in 1984 and was recommended as not eligible for the NRHP (King 1984a). This property was recorded and evaluated for inclusion on the California Register of Historic Resources (CRHR) and as a San José City Landmark (Local Register) by Franklin Maggi of Archives & Architecture, Inc. in July of 2016. The property was recommended as ineligible for inclusion on the CRHR or the Local Register (Maggi 2016).

PaleoWest Archaeology revisited the property on July 16, 2019. The current condition of the property appears to be largely unchanged with the exception of additional deteriorated from what was observed during the 2016 field visit.

Based on research and field observations, there is no additional information or changes to the property that could potentially alter the 1984 and 2016 eligibility recommendations made by Caltrans District 4 and Archives & Architecture, Inc. PaleoWest Archaeology concurs with the recommendation made by Caltrans District 4 and Archives & Architecture, Inc. that this property does not appear to be eligible for inclusion on the NRHP, CRHR, or the Local Register under any criteria.

5.3.3 1625 Alviso—Milpitas Road

This property, P-43-003579, was first evaluated by Caltrans District 4 in 1984 and was recommended as not eligible for the NRHP (King 1984b).

PaleoWest Archaeology revisited the property on July 16, 2019 and determined that the property is no longer extant (Appendix C: Photo 7).

5.3.4 1657 Alviso—Milpitas Road

The building located at 1657 Alviso-Milpitas Road is a one-story Craftsman Prairie-style house with Mission Revival influences was built circa 1929-1930 for a farming family who operated a large pear orchard of 79 acres just outside the town of Alviso. Now 65.4 acres in size due to acreage loss from the Coyote Creek channelization, the L-shaped ranch was mostly converted to row crops during the 1970s.

This property, P-43-003585, was first evaluated by Caltrans District 4 in 1984 and was recommended as not eligible for the NRHP (King 1984c). This property was recorded and evaluated for inclusion on the California Register of Historic Resources (CRHR) and as a San José City Landmark (Local Register) by Franklin Maggi of Archives & Architecture, Inc. in July of 2016. The property was recommended as ineligible for inclusion on the CRHR or as a City of San José Landmark, however; it was found to be eligible for inclusion on the City of San José Historic Resources Inventory (Maggi 2016).

PaleoWest Archaeology revisited the property on July 16, 2019. The current condition of the property appears to have deteriorated from what was observed during the 2016 field visit. Many of the windows have been destroyed and infilled with plywood and the property has been subject to vandalism. The building appears to be abandoned.

Based on research and field observations, there is no additional information or changes to the property that could potentially alter the 1984 and 2016 eligibility recommendations for the NRHP, CRHR, or as a City of San José Landmark made by Caltrans District 4 and Archives & Architecture, Inc. PaleoWest Archaeology concurs with the recommendation made by Caltrans District 4 and Archives & Architecture, Inc. that this property does not appear to be eligible for inclusion on the NRHP, CRHR, or as a City Landmark under any criteria. PaleoWest does not concur with the 2016 recommendation that the property is eligible for inclusion on the City of San José Historic Resources Inventory. In subsequent years the property has fallen to neglect and vandalism compromising the integrity of the building. While the architect of the building has not been identified, the previous evaluation by Archives & Architecture based part of their evaluation on the assumption that the building was the work of master architects Wolfe & Higgins. No records have been identified to confirm this assumption, as was discussed in the 2016 report. With the adjustments on the City of San José's Historic Evaluation Sheet due to the lack of evidence for the involvement of Wolfe & Higgins, the current conditions of the property, and the updated evaluation by PaleoWest staff, P-35-003585 obtains a score of 22.45 for the City of San José's Historic Evaluation criteria and is, therefore, not eligible for the City of San José's Historic Resources Inventory.

6.0 MANAGEMENT RECOMMENDATIONS

The cultural resource records search and field visit indicated no evidence of any archaeological resources within the Project area. Ground visibility within a majority of the Project area was very moderate, many of the linears were unable to be surveyed as there was no access to the routes. No known prehistoric sites were identified within the Project area, however 10 prehistoric sites, two multicomponent sites, and 22 built resources are present within the surrounding one-mile Project study area. While the Project area is close to the channelized section of Coyote Creek, this channelization somewhat follows the original path of the creek, but the bed has been significantly altered. As such, the archaeological sensitivity of the Project area is considered low.

The buildings at 1591 and 1657 Alviso-Milpitas Road were evaluated for historical significance in 2017 by applying the criteria of the CRHR and the Local Register during the 237 Industrial Center Project Historic Report (Maggi 2017). The buildings at 1515 and 1625 Alviso-Milpitas Road are no longer extant. PaleoWest concurs with Maggi's recommendation that neither 1591 or 1657 Alviso-Milpitas Road is eligible for listing on the CRHR. With the adjustments on the City of San José's Historic Evaluation Sheet for the current conditions of the property, and the updated evaluation by PaleoWest staff, P-35-003585 is not eligible for the City of San José's Historic Resources Inventory and therefore, it is not considered a historical resource for the purposes of CEQA. As these buildings are not recommended as eligible for the CRHR or the Local Register, there is no future resource management needed.

In the event that potentially significant archaeological materials are encountered during Project-related ground-disturbing activities, all work should be halted in the vicinity of the archaeological discovery until a qualified archaeologist can visit the site of discovery and assess the significance of the archaeological resource. In addition, Health and Safety Code 7050.5, CEQA 15064.5(e), and Public Resources Code 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Finally, should additional actions be proposed outside the currently defined Project area that have the potential for additional subsurface disturbance, further cultural resource management may be required.

7.0 REFERENCES

Beardsley, Richard K.

1948 Cultural Sequences in Central California Archaeology. *American Antiquity* 14(1):1-29.

1954 Temporal and Areal Relationships in Central California Archaeology. *University of California Archaeological Survey Reports* 24-25. University of California, Berkeley.

Bennyhoff, James A., and Richard E. Hughes

1987 Shell Bead Ornament Exchange Networks Between California and the Western Great Basin. *Anthropological Papers of the American Museum of Natural History* 64 (2):79-175. American Museum of Natural History, Washington, D.C.

Bocek, Barbara Rose

1986 Hunter Gatherer Ecology and Settlement Mobility Along San Francisquito Creek. Doctoral dissertation, Department of Anthropology, Stanford University, Palo Alto, CA.

Breschini, Gary S.

1983 Models of Population Movements in Central California Prehistory. Doctoral dissertation, Department of Anthropology, Washington State University, Pullman, WA.

Brown, L. (editor)

1985 *The Audubon Society Nature Guides. Grasslands*. Alfred A. Knopf, New York, NY.

Cambra, Rosemary, Alan Leventhal, Laura Jones, Les Field and Norma Sanchez

1996 Archaeological Investigations at Kaphan Umux (Three Wolves) Site, CA-SCL-732: A Middle Period Prehistoric Cemetery on Coyote Creek in Southern San José, Santa Clara County, California. Report on file at Caltrans District 4 Offices, Oakland, CA.

Chartkoff, Joséph L. and Kerry Kona Chartkoff

1984 *The Archaeology of California*. Stanford University Press, Palo Alto, CA.

City of Santa Clara

2010 City of Santa Clara General Plan 2010- 2035. Chapter 3, *Treasuring Our Past, Present and Future*. November 16, 2010.

2019 "A Brief History of Santa Clara." http://santaclaraca.gov/government/about-santa-clara/city-history.

Cook, Sherburne F.

1943 The Conflict Between the California Mission Indians and White Civilization. *Ibero-Americana* 22. Berkeley, CA.

Dennis, Michael Aaron

1999"Silicon Valley." https://www.britannica.com/place/Silicon-Valley-region-California.

Fages, Pedro
1972 [1772] Diary…in Search of the Port of San Francisco…Fages as Explorer, 1769-1772. Theodore S. Treutlein, editor. *California Historical Society Quarterly* 51:338-356.

Font, Pedro
1930[1776] Font's Complete Diary of the Second Anza Expedition. *Anza's California Expeditions, Vol. IV.* Herbert E. Bolton, editor. University of California Press, Berkeley.

Fredrickson, David A.
1973 Early Cultures of the North Coast Ranges. Doctoral Dissertation, Department of Anthropology, University of California, Davis, CA.
1974 Cultural Diversity in Early Central California: A View from the North Coast Ranges. *The Journal of California Anthropology* 1(1):41-53.
1994 Archaeological Taxonomy in Central California Reconsidered. In Toward a Taxonomic Framework for Central California Archaeology, Richard E. Hughes, editor, pp. 93–104. *Contributions of the University of California Archaeological Research Facility* 52. Berkeley.

Gerow, Burt with Roland Force
1968 *An Analysis of the University Village Complex with a Reappraisal of Central California Archaeology*. Stanford University Press, Palo Alto, CA.

Groza, Randall
2002 An AMS Chronology of Central California Olivella Shell Beads. Master's thesis, Department of Anthropology, California State University, San Francisco, CA.

Heizer, Robert F.
1964 The Western Coast of North America. In *Prehistoric Man in the New World*, Jesse D. Jennings and Edward Norbeck, editors, pp. 117-148. University of Chicago Press, Chicago, IL.

Heizer, Robert F. and Franklin Fenenga
1939 Archaeological Horizons in Central California. *American Anthropologist* 41:378-399.

Hughes, Richard E. (editor)
1994 *Toward a New Taxonomic Framework for Central California Archaeology. Essays by James A. Bennyhoff and David A. Fredrickson*. Contributions of the University of California Archaeological Research Facility 52, Berkeley.

King, Gregory
1984a DPR 523 Series Forms for P-43-003578. On file at the NWIC.
1984b DPR 523 Series Forms for P-43-003579. On file at the NWIC.
1984c DPR 523 Series Forms for P-43-003585. On file at the NWIC.
1985 DPR 523 Series Forms for P-43-003605. On file at the NWIC.

Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology of the Smithsonian Institution. Bulletin 78, Washington D.C.

Levy, Richard S.
1978 Costanoan. In *Handbook of North American Indians*, Vol. 8: *California*. Robert F. Heizer, editor, pp. 485-495. Smithsonian Institution, Washington, D.C.

Lightfoot, Kent and Edward Luby
2002 Late Holocene in the San Francisco Bay Area: Temporal Trends in the Use and Abandonment of Shell Mounds in the East Bay. In *Catalyst to Complexity: Late Holocene Societies of the California Coast,* Jon Erlandson and Michael Glassow, editors, pp. 129-141. Cotsen Institute of Archaeology, Los Angeles, CA.

Lillard, Jeremiah B., Robert F. Heizer and Franklin Fenenga
1939 An Introduction to the Archaeology of Central California. *Sacramento Junior College Department of Anthropology Bulletin* 2. Sacramento, CA.

Lillard, Jeremiah B., and William K. Purves
1936 The Archaeology of the Deer Creek-Cosumnes Area, Sacramento, Co., California. *Sacramento Junior College, Department of Anthropology Bulletin* 1. Sacramento, CA.

Maggi, Franklin
2016 237 Industrial Center (Cilker Family Properties) Historic Report. Prepared for David J. Powers & Associates, Inc. by Archives & Architecture, San José, CA.

Milliken, Randall
1983 The Spatial Organization of Human Population on Central California's San Francisco Peninsula at the Spanish Arrival. Masters thesis (Cultural Resources Management), Department of Anthropology, Sonoma State University, Rohnert Park, CA.

Milliken, Randall, and James A. Bennyhoff
1993 Temporal Changes in Beads as Prehistoric Grave Goods. In *There Grows a Green Tree: Papers in Honor of David A. Fredrickson*, Greg White, Pat Mikkelsen, William R. Hildebrandt, and Mark E. Basgall, editors, pp. 381-395. Center for Archaeological Research at Davis, Publication 11. University of California, Davis.

Milliken, Randall, Richard Fitzgerald, Mark G. Hylkema, Randy Groza, Tom Origer, David Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottsfield, Donna Gillette, Viviana Bellifemine, Eric Strother, Robert Cartier, and David A. Fredrickson
2007 Punctuated Culture Change in San Francisco Bay Area. In *California Prehistory: Colonization, Culture and Complexity*, Terry L. Jones and Kathryn A. Klar, editors, pp. 99-124. Altamira Press, New York, NY.

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Orlando, FL.

Nelson, Nels C.
1909 Shellmounds of the San Francisco Bay Area Region. *University of California Publications in American Archaeology and Ethnology* 7(4):310-356. University of California, Berkeley.

Price, Heather, Aimee Arrigoni, Jenni Price, Eric Strother, and Jim Allan
2006 Archaeological Investigations at CA-CCO-309, Rossmoor Basin, Contra Costa County, California. On file with the Nortwest Information Center, Sonoma State University, Rohnert Park, CA.

Ragir, Sonia
1972 The Early Horizon in Central California Prehistory. *Contributions of the University of California Archaeological Research Facility* No. 15. Berkeley.

Schenck, William E. and Egbert J. Dawson
1929 Archaeology of the Northern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 25(4):289-413. Berkeley.

Shipley, William F.
1978 Native Languages of California. In *Handbook of North American Indians,* Vol. 8: *California*, Robert F. Heizer, editor, pp. 80-90. Smithsonian Institution, Washington, D.C.

Shoup, Lawrence H., Randall T. Milliken and Alan K. Brown
1995 Inigio of Rancho Posolmi: The Life and Times of a Mission Indian and His Land. Prepared by Archaeological/Historical Consultants, Oakland, CA for Woodward-Clyde Consultants, Oakland, CA.

United States Geological Survey (USGS)
1889 San José 15 Minute Topographic Quadrangle.
1947 San José 15 Minute Topographic Quadrangle.
1953a San José 15 Minute Topographic Quadrangle.
1953b Milpitas 7.5 Minute Topographic Quadrangle.
1961 Milpitas 7.5 Minute Topographic Quadrangle.
1968 Milpitas 7.5 Minute Topographic Quadrangle.
1973 Milpitas 7.5 Minute Topographic Quadrangle.
1980 Milpitas 7.5 Minute Topographic Quadrangle.

Western Regional Climate Center
2010 Monthly Climate Summary, Santa Clara University, California, 7/1/1893 to 5/31/1976. Western Regional Climate Center, Reno, NV. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7912 accessed 10/19/2010.

Wiberg, Randy S.
1997 *Archaeological Investigations at Site CA-ALA-42, Alameda County, California: Final Report*. Coyote Press, Salinas, CA.

Willey, Gordon R., and Philip Phillips
1958 *Method and Theory in American Archaeology*. University of Chicago Press, Chicago, IL.

Appendix A.
Previous Cultural Resource Studies

Table A-1: Cultural Resource Studies within the Project area

Report Number	Authors	Year	Title	Publisher
S-004143	Rob Edwards	1974	Archaeological Reconnaissance of the San José - Santa Clara Water Pollution Control Plant Advanced Treatment Facilities	University of California, Santa Cruz
S-004292	Joséph C. Winter	1976	Archeological Resources and Impact of Eight Proposed City of Santa Clara Projects, Job #76-10	
S-004441	Stephen A. Dietz	1977	Archaeological reconnaissance of the Franch-Fromm-Rose property on North First Street in San José, California (letter report)	Archaeological Consulting and Research Services, Inc.
S-004892	Margaret Buss	1981	Archaeological Survey Report for Proposed High Occupancy Vehicle Lanes, 04-SCL-237 R 4.6/9.3, 04215-401910	Caltrans District 04
S-005903	James C. Bard	1983	A Cultural Resources Assessment of the North Zanker Development Parcel at the Junction of Highway 237 and Zanker Road, San José, California	Basin Research Associates, Inc.
S-006072	Donna M. Garaventa, David Bateman, John M. Findlay, R. M. Harmon, W. McCormack, R. L. Anastasio, and J. C. Bard	1983	Archaeological Survey Report, Coyote Creek Flood Control Project Located Between San Francisco Bay to Montague Expressway, City of San José, Santa Clara County	Basin Research Associates, Inc.
S-006410	Donna M. Garaventa, James C. Bard, Robert M. Harmon, Amy A. Gowan, and R. L. Anastasio	1984	Archaeological Survey Report, Coyote Creek Flood Control Project Located Between San Francisco Bay to Montague Expressway, City of San José, Santa Clara County, California	Basin Research Associates, Inc.
S-006538	Archaeological Resource Management	1984	Subsurface Archaeological Testing of the Cali Parcel on Highway 237 in the City of San José, County of Santa Clara	Archaeological Resource Management
S-006786	Donna M. Garaventa, Rebecca Loveland Anastasio, and Stuart A. Guedon	1984	Cultural Resources Survey of a Parcel Located on the North Side of Highway 237 East of Zanker Road, City of San José, Santa Clara County, California	Basin Research Associates, Inc.
S-007995	Robert L. Gross	1986	Historic Properties Survey Report for the Proposed Upgrading of Route 237 to Freeway Standards With Bicycle Route Alternatives, Santa Clara County, 4-SCL-237 3.2/9.5, 04215-117000	Caltrans District 4
S-007995a	Robert L. Gross	1986	Archaeological Survey Report for the Proposed Upgrading of Route 237 to Freeway Standards With Bike Route Alternatives, Santa Clara County, 4-SCL-237 3.2/9.5, 04215-117000	Caltrans District 4
S-007995b	Gregory King	1986	Historic Architectural Survey Report for the Proposed Upgrading of Route 237 to Freeway Standards With Bike Route Alternatives, Santa Clara County, 4-SCL-237 3.2/9.5, 04215-117000	California Department of Transportation, District 4
S-007995c	Robert L. Gross	1985	Archaeological Survey Report for the Proposed Upgrading of Route 237 To Freeway Standards With Bike Route Alternatives, Santa Clara County, 4-SCL-237 3.2/9.5, .4215-117000	Caltrans District 4
S-008626	Dorothea J. Theodoratus, Clinton M. Blount, Ruth M. Begell, Billy J. Peck, Richard D. Ambro, Lynn L. Marshall, Ann H. Johnson, and Mary Agnes Dougherty	1980	Cultural Resources Investigation, Second Expansion of Rincon de los Esteros Redevelopment Project.	Theodoratus Cultural Research
S-014230	Robert Cartier, Allika Ruby, Jason Bass, and Mike Kelley	1992	Evaluation of Archaeological Resources for the San José/Santa Clara Nonpotable Water Reclamation Project	Archaeological Resource Management

S-014609	Angela M. Banet and John Yelding-Sloan	1992	Cultural Resources Assessment, AM Radio Towers Relocation Project, City of San José, California	Basin Research Associates, Inc.
S-018289	Basin Research Associates, Inc.	1995	Cultural Resources Assessment, Alviso Master Plan Area, City of San José, Santa Clara County, California	Basin Research Associates, Inc.
S-018455	Matthew R. Clark	1996	Archaeological Reconnaissance of the 3Com North San José Project Area on Highway 237 Between Zanker Road and North First Street, in the City of San José	Holman & Associates
S-019063	Randy S. Wiberg	1997	Archaeological Mechanical Testing of the 3COM North San José Project Area, San José, California	Holman & Associates
S-019072	Colin I. Busby, Donna M. Garaventa, Melody E. Tannam, and Stuart A. Guedon	1996	Historic Properties Treatment Plan, South Bay Water Recycling Program.	Basin Research Associates, Inc.
S-019072a	Colin I. Busby, Donna M. Garaventa, Melody E. Tannam, and Stuart A. Guedon	1996	Supplemental Report: Historic Properties Affected or Potentially Affected by the South Bay Water Recycling Program	Basin Research Associates, Inc.
S-019072b	Colin I. Busby	1999	South Bay Water Recycling Program - Cultural Resources Program, Subcontract No. 728106.3024, Monitoring Closure Report - Phase 1 (letter report)	Basin Research Associates, Inc.
S-019134	Glory Anne Laffey and Charlene Duval	1997	Historical Background of the 3COM Project Area on Route 237 Between North First Street and Zanker Road, City of San José, County of Santa Clara	Archives & Architecture
S-019424	John Holson	1997	Cultural Resources Survey for the Los Esteros Project, Santa Clara County (letter report)	Pacific Legacy, Inc.
S-022980	Randy S. Wiberg	2000	Archaeological Reconnaissance of the U.S. Dataport Planned Development Rezoning EIR Project Area, on Highway 237 Between Coyote Creek and Zanker Road, City of San José, California	Holman & Associates
S-023382	Basin Research Associates, Inc.	2000	Cultural Resources Assessment, Historic Properties Affected or Potentially Affected by the South Bay Water Recycling Program Phase 2 Facilities, Modifications to Existing Segments SJ-1, SJ-2, SC-2, SC-5, M-1 and New Segments SJ-3, SJ-4, SJ-5, SJ-6, SJ-7, M-2, M-5, Cities of San José and Milpitas, Santa Clara County	Basin Research Associates, Inc.
S-023400	Basin Research Associates, Inc.	2000	Addendum No. 1: Cultural Resources Assessment, PG&E Proposed Northeast San José Transmission Reinforcement Project	Basin Research Associates, Inc.
S-025031	Basin Research Associates, Inc.	2000	Cultural Resources Assessment, Bay Trail Master Plan Project, City of San José, Santa Clara County, California	Basin Research Associates, Inc.
S-031924	Colin I. Busby	2004	Cultural Resources Report (CRR), Los Esteros Critical Energy Facility (LECEF), City of San José, Santa Clara County, California Energy Commission (CEC), Project 01-AFC-12	Basin Research Associates, Inc.
S-031924a	Colin I Busby	2002	Los Esteros Presence/Absence Testing Initial Results, February 16, 2002	Basin Research Associates
S-031924b	Colin I. Busby	2002	Field Report-Mechanically Assisted Presence/Absence Testing of the Los Estero Critical Energy Facility Access Road and Linear Alignments, City of San José, Santa Clara County	Basin Research Associates
S-031924c	Clint Helton and Henry Davis	2018	Cultural Resources Report, Los Esteros Critical Energy Facility, Santa Clara County, California (03-AFC-2)	CH2M Hill
S-034215	Colin I. Busby	2000	Cultural Resources Assessment, Bay Trail Master Plan Project, Cities of Milpitas and San José, Santa Clara County, California	Basin Research Associates, Inc.
S-034225	Basin Research Associates, Inc.	2006	Archaeological Assessment Report, Public Safety Driver Training Facility, City of San José, Santa Clara County	Basin Research Associates, Inc.

S-037746	Elena Reese	2010	Archaeological Monitoring for Phase 1 of the South Bay Advanced Recycled Water Treatment Facility Project Excavations off Zanker Road in San José, California (letter report)	Pacific Legacy, Inc.
S-039097	Colin I. Busby	2011	Archaeological Assessment Report, Nortech Zanker Main Connection Project, City of San José, Santa Clara County	Basin Research Associates
S-046211	Jennifer C. Bowden	2012	San José/Santa Clara Water Pollution Control Plant Master Plan, Cultural Resources Survey Report	Environmental Science Associates
S-046337	Adrian Whitaker	2014	State Route 237 Express Lanes Phase 2 Project, Historic Property Survey Report (HPSR), Including Archaeological Survey Report (ASR), Extended Phase I (XPI) Report, and Environmentally Sensitive Area (ESA) Plan, SR 237 and US 101, Santa Clara County, California; Caltrans District 4, SCL-237 PM 2.3/8.2, EA 04-4H280K, Project ID 0413000202	Far Western Anthropological Research Group, Inc.
S-046337a	Adrian R. Whitaker	2014	Archaeological Survey Report for the State Route 237 Express Lanes Phase 2 Project, 4-SCL-237; PM 2.3/8.2, EA-04-4H280K, Project ID No. 0413000202	Far Western Anthropological Research Group, Inc.
S-046337b	Adrian Whitaker and Philip Kaijankoski	2014	Extended Phase I Investigation for the SR 237 Phase 2 Express Lane Project, Santa Clara County, California, 4-SCL-237; PM 2.3/8.2, EA-04-4H280K, Project ID No. 0413000202	Far Western Anthropological Research Group, Inc.
S-046337c	Adrian Whitaker	2014	State Route 237 Express Lanes Phase 2 Project, Environmentally Sensitive Area Action Plan for Site P-43-000032/CA-SCL-12/H, SR 237 and US 101, Santa Clara County, California; Caltrans District 4, SCL-237 PM 2.3/8.2, EA 04-4H280K, Project ID 0413000202	Far Western Anthropological Research Group, Inc.
S-046337d	Adrian R. Whitaker and Naomi Scher	2015	Addendum Extended Phase I Investigation for the SR 237 Phase 2 Express Lane Project, Santa Clara County, California; 4-SCL-237; PM 2.3/8.2, EA-04-4H280K, Project ID No. 0413000202	Far Western Anthropological Research Group, Inc.
S-046753	Heidi Koenig	2015	Cultural Resources Survey Report, San José-Santa Clara Regional Wastewater Facility, Zanker Road Development Area	Environmental Science Associates
S-048562	Heidi Koenig	2015	6970 - Fiber Optic Connection, San José / Santa Clara Regional Wastewater Facility Archaeologically Sensitive Area and Cultural Resources Monitoring (letter report)	Environmental Science Associates
S-048562a	Heidi Koenig	2016	Archaeological Monitoring Results - 6970 - Fiber Optic Connection, San José / Santa Clara Regional Wastewater Facility (ESA #131002.12)	Environmental Science Associates

Table A-2: Cultural Resource Studies within the 1-mile Buffer

Report Number	Authors	Year	Title	Publisher
S-004230	William G. Roop	1975	Archaeological Impact Evaluation, Nine-Par Solid Waste Disposal Facility (Job No. E-74296) on Zanker Road, San José, California	Archaeological Resource Service
S-004242	Joseph C. Winter	1976	Archaeological Resources and Impact of the Dorcich Development, Santa Clara County	
S-004258	Stephen A. Dietz	1976	An archaeological reconnaissance and records search for the proposed Abel St. and Main St. improvements in Milpitas, California (letter report)	Archaeological Consulting and Research Services, Inc.
S-004268	Stephen A. Dietz	1975	An archaeological reconnaissance of the Amfac properties located near Alviso in Santa Clara County, California (letter report)	Archaeological Consulting and Research Services, Inc.
S-004432	Thomas L. Jackson	1976	Archaeological reconnaissance of the Chinchen Property, San José, California (letter report)	Archaeological Consulting and Research Services
S-004434	Stephen A. Dietz	1976	Archaeological reconnaissance of the Silvia property near the intersection of Highway 237 and the San José-Alviso Road in San José, California (letter report)	Archaeological Consulting and Research Services
S-004442	Archaeological Consulting and Research Services, Inc.	1977	Archaeological Reconnaissance of Certain Portions of the Rincon de los Esteros Redevelopment Area, San José, California	Archaeological Consulting and Research Services, Inc.
S-004483	Katherine Flynn	1978	Lands of Smith, APN 15-30-12 & 42 (ARS 78-16) - proposed Recreational Vehicle Facility (letter report)	Archaeological Resource Service
S-004555	Stephen A. Dietz	1978	Archaeological Reconnaissance of Approximately Nine Acres of Santa Clara Valley Water District Property Adjacent to the Lands of Chinchen	Archaeological Consulting and Research Services, Inc.
S-004556	Robert Cartier	1978	Archaeological Evaluation of Alviso Streets and Storm Drains	Archaeological Resource Management
S-004583	David Chavez	1978	Cultural Resources Evaluation for the San José/Santa Clara Wastewater Solids Study Site, Santa Clara County, California	David Chavez
S-004600	James C. Bard and Colin I. Busby	1978	An Archaeological Assessment of Five Sewer Lines/Outfalls and One Street Improvement Project, City of San José, California	Basin Research Associates
S-004623	James C. Bard and Colin I. Busby	1979	Archaeological Assessments of Five Sewer Line/Outfalls and Various Street Improvement Projects, City of San José, California	Basin Research Associates
S-004772	Thomas L. Jackson, Miley P. Holman, and Stephen A. Dietz	1973	An Archaeological Reconnaissance of the Santa Clara County Flood Control and Water District East Zone Flood Control Project	Adan E. Treganza Anthropology Museum, California State University, San Francisco
S-004829	Stephen A. Dietz	1977	An archaeological reconnaissance of the Brandenburg, Staedler, and Moore mobile home community property (letter report)	Archaeological Consulting and Research Services, Inc.
S-004932	Robert Cartier	1982	Secondary, Subsurface Archaeological Evaluation of the River Oaks North Project on North First Street in the City of San José, County of Santa Clara	Archaeological Resource Management
S-004955	Charlene Detlefs, Robert Cartier, Glory Laffey, Joe Morris, Gerrit Fenenga, and Peter Johnson	1980	Cultural Resource Evaluation of the Presence or Absence of Historic and Prehistoric Sites for the Guadalupe River Flood Control Project	Archeological Resource Management
S-004955a	B. Bocek, C. Breschini, R. Cartier, C Detlefs, M. Fazio, G. Fenenga, M. Fentress, G. Foster, J. Hall, T. Haversat, P. Johnson, G. Laffey, P. Richard, and T. Van Bueren	1981	Cultural Resource Evaluation of the Guadalupe River Flood Control Project Between Trimble Road and the Southern Pacific Railroad Crossing	Archaeological Resource Management
S-004960	James C. Bard, Colin I. Busby, David J. Fee, and Melody E. Tannam	1981	The Boundary Determination of CA-SCL-6 East, Santa Clara County, California.	Basin Research Associates, Inc.
S-004960a	James C. Bard and Donna M. Garaventa	1981	Aboriginal and Historic Artifacts Recovered From CA-SCL-6 East	Basin Research Associates, Inc.
S-004960b	Larry S. Kobori and Melissa C. Kennard	1981	Human Skeletal Remains From Site CA-SCL-6 East	Basin Research Associates, Inc.

S-004988	Donna M. Garaventa, Colin I. Busby, Robert M. Harmon, and Woodruff Minor	1982	A Cultural Resources Assessment of Three Parcels Located Along Route 237 and First Street, Alviso, City of San José, California	Basin Research Associates, Inc.
S-004988a	Woodruff Minor	1982	Assessment of Architectural Significance of the Property at 1600 Taylor Street, San José (The Lords Farm)	Basin Research Associates, Inc.
S-005201	Margaret Duddy	1982	Archaeological reconnaissance of 12 acre parcel, for Wai Kwok Wong et al, on Highway 237, San José (letter report)	Archaeological Resource Service
S-005204	Margaret Duddy	1982	Archaeological reconnaissance of the Verbatim Corporation parcel, San José, CA (letter report)	Archaeological Resource Service
S-005344	William Roop, Christian Gerike, and Katherine Flynn	1981	Request for Determination of Eligibility to the National Register of Historic Places for Fourteen Prehistoric Cultural Resources Within the Guadalupe Corridor, Northern Santa Clara Valley, California	Archaeological Resource Service
S-005719	Donna M. Garaventa and Robert M. Harmon	1982	A Cultural Resources Assessment of a Land Parcel, Alviso, Santa Clara County	Basin Research Associates, Inc.
S-005898	James C. Bard, Patricia M. Ogrey, and Donna M. Garaventa	1983	A Cultural Resources Assessment of a Parcel Located on the East Side of North First Street, North of Nicholson Lane, City of San José, Santa Clara County, California	Basin Research Associates, Inc.
S-005981	Robert Cartier	1982	Cultural Resource Evaluation of River Oaks North on North First Street in the City of San José, County of Santa Clara	Archaeological Resource Management
S-006015	Robert Cartier	1983	Subsurface Archaeological Testing of the Lands of Lincoln Property Company on North First Street in the City of San José, California.	Archeological Resource Management
S-006017	Robert Cartier	1983	Archaeological Testing at CA-SCL-6 East on Tasman Drive in the City of San José, County of Santa Clara, California.	Archaeological Resource Management
S-006064	Parsons, Brinckerhoff, Quade & Douglas, Inc.; Kobori Environmental Management Corp.	1983	Request for No Adverse Effect Determination for Archaeological Resources in Accordance with 36 CFR Part 800, CA-SCL-300, -302, & -288	Parsons, Brinckerhoff, Quade & Douglas, Inc.; Kobori Environmental Management Corp.
S-006064a	James C. Bard, Colin I. Busby, Donna M. Garaventa, Larry S. Kabori, Rebecca L. Anastasio, Raymond J. Dezzani, and Melody E. Tannam	1984	A Presence/Absence Testing Proposal for Archaeological Sites CA-SCL-300, -302, and -288, as Part of the Guadalupe Transportation Corridor Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-006064b	James C. Bard, Colin I. Busby, Raymond J. Dezzani, Donna M. Garaventa, Patricia M. Ogrey, Rebecca L. Anastasio, Stuart A. Guedon, Jeffrey A. Parsons, Michael A. Siskin, Elin W. Smith, James F. Thomas, and Melody E. Tannam	1986	Presence/Absence Testing Results for Archaeological Sites CA-SCL-300/302/288 and CA-SCL-418 as Part of the Guadalupe Corridor Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-006064c	Jill G. James, R. L. Anastasio, J. C. Bard, A. E. Banet, C. I. Busby, M. R. Fong, D. M. Garaventa, S. A. Guedon, R. M. Harmon, P. M. Ogrey, and M. E. Tannam	1987	Phase II Archaeological Monitoring Results as Part of the Guadalupe Transportation Corridor Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-006065	Parsons, Brinckerhoff, Quade & Douglas; Kobori Environmental Management Corp.	1983	Request for No Adverse Effect Determination for Archaeological Resources in Accordance with 36 CFR Part 800, CA-SCL-418	Parsons, Brinckerhoff, Quade & Douglas; Kobori Environmental Management Corp.
S-006122	Miley Paul Holman and Randy Wiberg	1983	A report of archaeological site perimeter location at the North Zanker Development Parcel at the junction of Highway 237 and Zanker Road, San José, California	Holman & Associates
S-006204	Katherine Flynn	1983	Archaeological reconnaissance of proposed levee alignment, Alviso, Santa Clara County (letter report)	Archaeological Resource Survey
S-006276	Donna M. Garaventa, Rebecca Loveland Anastasio, Colin I. Busby, Jeffery T. Hall, John A. Lopez, and Patricia M. Ogrey	1983	A Cultural Resources Survey of the Holvick-Wong Project Located Along Alviso Milpitas Road (State Route 237), City of San José, California	Basin Research Associates, Inc.
S-006389	Donna M. Garaventa, Jeffrey T. Hall, John A. Lopez, Robert M. Harmon, Patricia M. Ogrey, and Melody E. Tannam	1984	Cultural Resources Survey of a Parcel Located between North First Street and Zanker Road in the City of San José, Santa Clara County, California.	Basin Research Associates, Inc.

S-006390	James C. Bard, Donna M. Garaventa, Patricia M. Ogrey, Robert M. Harmon, and Rebecca L. Anastasio	1984	Cultural Resources Survey: The Orchard 1002 Business Park Located between Rio Robles Drive and the Guadalupe River, City of San José, Santa Clara County, California	Basin Research Associates, Inc.
S-006519	Robert Cartier	1984	Cultural Resource Evaluation of a Parcel of Land on Wabash Avenue in Alviso, County of Santa Clara.	Archaeological Resource Management
S-006530	Robert Cartier	1984	Cultural Resource Evaluation of the Menlo Development Project on North First Street and Tasman Drive in the City of San José, County of Santa Clara	Archaeological Resource Management
S-006620	James C. Bard, Colin I. Busby, Larry S. Kobori, John M. Findlay, Donna M. Garaventa, Patricia M. Ogrey, Rebecca L. Anastasio, Melody E. Tannam, and Carolyn Grattan	1984	Excavations at CA-SCL-6 East and CA-SCL-268, a Limited Data Recovery Operation, Santa Clara County, California	Basin Research Associates, Inc.
S-006621	James C. Bard, Colin J. Busby, L. S. Kobori, D. J. Fee, M. C. Kennard, and M. E. Tannam	1981	The Archaeological Sensitivity of the Oakmead Project, Santa Clara County, California: A Subsurface Testing Program.	Basin Research Associates, Inc.
S-006822	James C. Bard, Donna M. Garaventa, Robert M. Harmon, Rebecca Loveland Anastasio, Annie Cody, Jeff Parsons, and Melody E. Tannam	1984	An Archaeological Survey of the McCarthy Ranch Located Between Coyote Creek, Highway 17, Dixon Landing Road, and Highway 237, Milpitas, California	Basin Research Associates, Inc.
S-006856	James C. Bard, Colin I. Busby, Donna M. Garaventa, Larry S. Kabori, Rebecca L. Anastasio, Raymond J. Dezzani, and Melody E. Tannam	1984	A Presence/Absence Testing Proposal for Archaeological Site CA-SCL-418 as Part of the Guadalupe Corridor Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-006872	Robert Cartier	1984	Cultural Resource Evaluation of the Proposed Site of a 200-Bed Concrete Tilt-up Facility at Elmwood Rehabilitation Center in the City of Milpitas, County of Santa Clara	Archaeological Resource Management
S-007288	James C. Bard, Colin I. Busby, John M. Findlay, Donna M. Garaventa, Rebecca L. Anastasio, and Melody E. Tannam	1985	A Presence/Absence Testing Proposal for Archaeological Site CA-SCL-447/6E as Part of the Guadalupe Corridor Transportation Project Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-007288a	James C. Bard, Colin I Busby, John M. Findlay, Donna M. Garaventa, Robert M. Harmon, Rec Rebecca Anastasio, and Melody E. Tannam	1985	Presence/Absence Testing Results of Archaeological Site CA-SCl-447/6E as Part of the Guadalupe Corridor Transportation Project Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-007288b	James C. Bard, Colin I. Busby, Raymond J. Dezzani, John M. Findlay, Donna M. Garaventa, Rebecca L. Anastasio, and Melody E. Tannam	1985	Proposed Data Recovery Plan for Archaeological Site CA-SCl-447/6E as Part of the Guadalupe Corridor Transportation Project Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-007288c	James C. Bard, Colin I. Busby, John M. Findlay, Donna M. Garaventa, Rebecca L. Anastasio, and Melody E. Tannam	1985	Request for No Adverse Effect Determination for Archaeological Site CA-SCl-447/6E in Accordance with 36 CFR Part 800	Basin Research Associates, Inc.
S-007288d	James C. Bard, Colin I Busby, Raymond J. Dezzani, John M. Findlay, Donna M. Garaventa, R.L. Anastasio, M.C. Belmman, S.L. Brock, S.A. Guedon, R.M. Harmon, M.D. Meyer, P.M. Ogrey, R.T Schinowsky, E.W. Smith, M.E. Tannam, J.F. Thomas, and J.B. Watson	1986	Data Recovery at CA-SCl-6E-447 as Part of the Guadalupe Transportation Corridor Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-007288e	Colin I. Busby, John M. Findlay, Donna M. Garaventa, James C. Bard, Rebecca L. Anastasio, and Melody E. Tannam	1984	Request for Determination of Eligibility to the Nation Register of Historic Places for Archaeological Site CA-SCL-6E/447 as Part of the Guadalupe Transportation Corridor Compliance with 36 CFR Part 800	Basin Research Associates, Inc.
S-007288f	Colin I. Busby	1984	Addendum to a Report Entitled Request for Determination of Eligibility to the National Register of Historic Places for Archaeological Site-SCL-6E/447 as Part of the Guadalupe Transportation Corridor with 36 CFR Part 800	Basin Research Associates, Inc.

S-007397	Margaret L. Buss	1985	Archaeological Survey Report, proposed interchange and auxiliary lanes on Route 880, 04-SCl-880 P.M.21.3/22.3 4216-113650	California Department of Transportation
S-007552	James C. Bard, Colin I. Busby, Patricia M. Ogrey, D. M. Garaventa, J. M. Findlay, R. L. Anastasio, A. Gowan, J. Hall, R. Harmon, J. Parsons, M. Siskin, M. Tannam, and J. Lopez	1985	Cultural Resources Monitoring Report of Orchard Properties, Inc. Projects 515 and 1001, Including Sites CA-SCL-418, 553, 559, and 569H, San José, California.	Basin Research Associates, Inc.
S-007557	Robert Cartier	1985	Cultural Resource Evaluation of the Elmwood Rehabilitation Center Pre-Trial Facility in the City of Milpitas, County of Santa Clara	Archaeological Resource Management
S-007563	Robert Cartier	1985	Cultural Resource Evaluation for the Elmwood Detention Facility Master Plan in the City of Milpitas, County of Santa Clara	Archaeological Resource Management
S-007710	Rebecca Loveland Anastasio and Patricia M. Ogrey	1985	A Cultural Resources Assessment of Lamplighter Mobile Home Park, 4201 North First Street, City of San José, Santa Clara County, California.	Basin Research Associates, Inc.
S-008122	Rebecca Loveland Anastasio and Michael D. Meyer	1986	A Cultural Resources Assessment of a Portion of the Proposed Fourth Interceptor, City of San José, Santa Clara County, California.	Basin Research Associates, Inc.
S-008257	Michael R. Corbett	1986	Architectural and Historical Assessment of the Shaughnessy-Murphy Ranch, Milpitas, California.	Michael R. Corbett
S-008258	Michael R. Corbett	1986	Architectural and Historical Assessment of the Bellew-McCarthy Ranch, Milpitas, California.	Michael R. Corbett
S-008368	Stephen A. Dietz	1980	Milpitas Golf Course Site, Dixon Landing Road at Highway 17 (letter report)	Archaeological Consulting & Research Services, Inc.
S-008375	James C. Bard, John M. Findlay, Donna M. Garaventa, Colin I. Busby, and Larry S. Kobori	1980	Cultural Resources Monitoring in the Rincon de los Esteros Redevelopment Project: Improvement District 153 SJ, San José, California	Basin Research Associates, Inc.
S-008387	David Chavez	1980	Archaeological Resources Assessment for the Guadalupe Corridor Alternatives Analysis Draft Environmental Impact Statement, Santa Clara County, California	David Chavez
S-008387a	William Roop	1981	An Evaluation of the Applicability of section 4 (f) of the Department of Transportation Act to the Guadalupe Corridor Transportation Plan Alternatives (letter report)	Archaeological Resource Service
S-008387b	William Roop, Christian Gerike, and Margaret Duddy	1982	Prehistoric Archaeological Survey Report, Guadalupe Transportation Corridor, Santa Clara County, California.	Archaeological Resource Service
S-008472	James C. Bard, Albert C. Oetting, and Frederick M. Oglesby	1981	A Cultural Resources Assessment of the Koll Company's River Oaks Park Northern Expansion Project, San José, CA	Basin Research Associates, Inc.
S-008525	Margaret Duddy	1980	Archaeological Survey of the "Lands of Silvera" (letter report)	Archaeological Resource Service
S-008545	Robert Cartier	1980	Cultural Resource Evaluation for the Perry and Ariallaga Project in Milpitas.	Archaeological Resource Management
S-008606	David J. Fee, Donna M. Garaventa, James C. Bard, and Colin I. Busby	1981	Cultural Resources Monitoring, State Street and Spreckles Avenue Storm Drain Project, City of San José, California.	Basin Research Associates, Inc.
S-008617	Patricia H. Ogrey and James C. Bard	1981	An Archaeological Reconnaissance of the Brandenburg, Staedler and Moore (Fromm) Parcel - San José, California.	Basin Research Associates, Inc.
S-008935	Rebecca L. Anastasio, James C. Bard, Sharon L. Brock, Colin I. Busby, Donna M. Garaventa, and Melody E. Tannam	1986	Archaeological Monitoring Results, Oakmead Improvement District 81-166 SJ, City of San José, Santa Clara County, California	Basin Research Associates, Inc.
S-008977	Robert L. Gross	1986	Archaeological Survey Report, highway widening from Montague Espressway in Santa Clara County to Route 262 in Alameda County, 04-SCL/ALA-880 P.M. 6.7/10.5-0.0/2.3 04570-112820	California Department of Transportation
S-009144	Robert Cartier	1987	Cultural Resource Evaluation for the Elmwood Detention Facility Master Plan in the City of Milpitas, County of Santa Clara	Archaeological Resource Management
S-009193	Rebecca Loveland Anastasio, Mella J. Rothwell, and Melody E. Tannam	1987	A Cultural Resources Assessment of the Fairway Glen Project, City of Santa Clara, Santa Clara County, California	Basin Research Associates, Inc.
S-009235	Glory Anne Laffey	1987	Historic Resource Assessment of Arena Site C on Zanker Road and Route 237 in the City of San José, County of Santa	Archaeological Resource Management

			Clara	
S-009238	Archaeological Resource Management	1987	Cultural Resource Evaluation of Rose Orchard Business Park Site in the City of San José, County of Santa Clara	Archaeological Resource Management
S-009481	Archaeological Resource Management	1987	Cultural Resource Evaluation of the Abel School Site on South Abbott Avenue in the City of Milpitas, County of Santa Clara	Archaeological Resource Management
S-009531	Robert M. Harmon, Rebecca L. Anastasio, Raymond J. Dezzani, James C. Bard, Melody E. Tannam, and Stuart A. Guedon	1987	Presence/Absence Testing Program at Prehistoric Archaeological Site CA-SCL-6, City of Santa Clara, Santa Clara County, California	Basin Research Associates, Inc.
S-009767	Margaret L. Buss	1987	Archaeological Survey Report, Interchange at Route 237 and Great American Parkway, 04-SCl-237 P.M. 3.2/9.4 284-117000	Caltrans
S-010032	Robert Cartier	1988	Cultural Resource Evaluation of the First Place Commercial Development on North First Street in the City of San José, County of Santa Clara	Archaeological Resource Management
S-010200	David Chavez, Sally B. Woodbridge, and Jan M. Hupman	1988	Cultural Resources Evaluation for the Fremont-South Bay Corridor Study: Alternatives Analysis, Alameda and Santa Clara Counties, California	David Chavez & Associates
S-010513	Robert Cartier	1988	Cultural Resource Evaluation of a Parcel (APN 15-11-106) on Pacific Avenue in the Town of Alviso, County of Santa Clara	Robert Cartier
S-010520	Robert Cartier	1988	Cultural Resource Evaluation of a Parcel on North First Street and Tasman Drive in the City of San José, County of Santa Clara	Archaeological Resource Management
S-010536	Robert Cartier	1988	Cultural Resource Evaluation of the Parcel on North First Street in the City of San José, County of Santa Clara	Archaeological Resource Management
S-010857	Robert Cartier	1989	Cultural Resources Evaluation of Five Proposed Locations for the Agnews Development Center (East) Cogeneration Facility in the City of San José, County of Santa Clara	Archaeological Resource Management
S-011257	Archaeological Resource Management	1989	Cultural Resource Evaluation for a Parcel on Spreckels Avenue in the Town of Alviso, County of Santa Clara	Archaeological Resource Management
S-011360	Glory Anne Laffey	1989	Historic Architectural Survey Report for Tasman Drive Extension/Interchange Project, 4-SCL-880 21.3/22.3 04 216-113650	Archaeological Resource Management
S-011360a	Kathryn Gualtieri and Bruce E. Cannon	1985	I-880 - Tasman Drive Interchange	California Office of Historic Preservation; U.S. Department of Transportation, Federal Highway Administration
S-011360b	Robert Cartier	1989	Extended Phase I and Phase II Archaeological Report for Tasman Drive Extension/Interchange Project, 4-SCL-880 21.3/22.3 04 216-113650	Archaeological Resource Management
S-011764	Miley Paul Holman	1989	Archaeological Field Inspection of the Rose Orchard Property, North San José, Santa Clara County, California (letter report)	Holman & Associates
S-011884	Jill G. James, Michael R. Fong, James C. Bard, Angela M. Banet, Melody E. Tannam, Colin I. Busby, and Rebecca L. Anastasio	1990	Analysis of Native American Skeletal Remains Recovered during Emergency Disinterment at CA-SCL-678, City of Milpitas, Santa Clara County,	Basin Research Associates, Inc.
S-012032	Angela M. Banet and Steve J. Rossa	1990	A Cultural Resources Assessment for the Preliminary Environmental Analysis for the Proposed Santa Clara Ball Park, Route 237 and Lafayette Street, Cities of San José and Santa Clara, Santa Clara County, California	Basin Research Associates, Inc.
S-012070	Robert Cartier, Laurie Crane, Paul Etheridge, Glory Anne Laffey, Lorna Pierce, Jeanelle Rusmisel, Richard San Filippo, Victoria Spillman, Irene Van Zandt, and James Welch	1990	Archaeological Excavations at CA-SCL-6W, the Lick Mill Boulevard Site	Archaeological Resource Management
S-012294	Suzanne Baker and Laurence H. Shoup	1990	Archaeological Survey Report, Tasman Corridor Project, Santa Clara County, California	Archaeological/Historical Consultants
S-012294a	Suzanne Baker and Laurence H. Shoup	1991	Final Report, Archaeological Survey Report, Tasman Corridor Project, Santa Clara County, California	Archaeological/Historical Consultants

S-012294b	Mark Brack, Laurence H. Shoup, and Suzanne Baker	1991	Historic Architectural Survey Report, Tasman Corridor Project, Santa Clara County, California	Archaeological/Historical Consultants
S-012294c	Suzanne Baker	1991	Final Report, Addendum to Archaeological Survey Report, Tasman Corridor Project, Santa Clara County, California: Archaeological Testing at CA-SCL-20	Archaeological/Historical Consultants
S-012294d	Archaeological/Historical Consultants; Woodward-Clyde Consultants	1992	Finding of Effect for the Tasman Corridor Light Rail Project	Archaeological/Historical Consultants; Woodward-Clyde Consultants
S-012294e	Kathryn Gualtieri, Steade R. Craigo, Daniel Abeyta, and Roy Molseed	1991	UMTA891122A; UMTA890407A; Tasman Corridor, Santa Clara County; Santa Clara Valley Transportation Authority	Office of Historic Preservation; Santa Clara Valley Transportation Authority
S-012563	Archaeological Resource Management	1990	Cultural Resource Evaluation for a Parcel on N. First Street in the City of San José, County of Santa Clara	Archaeological Resource Management
S-013830	Miley Paul Holman	1991	Archaeological Field Inspection of the Zuken Project, San José, Santa Clara County, California (letter report)	Holman & Associates
S-014512	Robert Cartier, Elena Reese, and Glen Wilson	1992	Subsurface Archaeological Testing Evaluation at CA-SCL-447 for the Tasman Park Project	Archaeological Resource Management
S-014762	Robert Cartier	1992	Cultural Resource Evaluation for Hetch Hetchy Pipeline Project, County of Santa Clara	Archaeological Resource Management
S-015131	Robert Cartier, Jason Bass, Scott Ortman, Robert Jurmain, Kim Holanda, Jon Reddington, Eric Perry, Edward Riffle, and Glen Wilson	1993	The Archaeology of the Guadalupe Corridor	The Santa Clara County Archaeological Society; Archaeological Resource Management
S-015132	Robert Cartier, Laurie Crane, Paul Etheridge, Glory Anne Laffey, Lorna Pierce, Jeanelle Rusmisel, Richard San Filippo, Victoria Spillman, Irene Van Zandt, James Welch, and Glen Wilson	1993	Archaeological Excavations at CA-SCL-6W: The Lick Mill Boulevard Site	Archaeological Resource Management
S-015562	Jeff A. Parsons	1992	Report on Fieldwork: Archaeological Monitoring of Oakmead Pump Station, Toxic Materials Investigation, Archaeological Site CA-SCL-5/268	Archaeological Resource Service
S-015794	Miley Paul Holman	1992	Archaeological Field Inspection of the Mozart Parcel, North First Street and Tasman Drive, San José, Santa Clara County (letter report)	Holman & Associates
S-015797	Miley Paul Holman	1992	Alviso GPA Archaeological Field Inspection, Alviso, San José, Santa Clara County, California (letter report)	Holman & Associates Archaeological Consultants
S-016738	Woodward-Clyde Consultants	1993	Extended Phase I Study Report, Archaeological Testing at North First Street and Route 237, San José, California (4-SCL-237, 3.2/9.5 04215 117000)	Woodward-Clyde Consultants
S-017510	Stephen A. Dietz	1979	Results of backhoe investigations at a proposed mobile home park on North First Street in San José, California (letter report)	Archaeological Consulting and Research Services, Inc.
S-017607	Archaeological Resource Management	1995	Cultural Resource Evaluation and Due Diligence Report of the Cisco 95 Project, City of San José	Archaeological Resource Management
S-017612	Archaeological Resource Management	1995	Cultural Resource Evaluation and Due Diligence Report of the Tasman C Project, City of San José	Archaeological Resource Management
S-017708	Colin I. Busby	1995	Cultural Resources Assessment, Cypress Semiconductor Environmental Clearance, Champion Ct., City of San José, Santa Clara County (letter report)	Basin Research Associates, Inc.
S-018297	Colin I. Busby	1995	Cultural Resources Assessment for Construction of Structure, Vicinity of Elmwood Correctional Facility, Tasman Drive and Interstate Route 880, City of Milpitas, Santa Clara County, California (letter report)	Basin Research Associates, Inc.
S-018406	Robert Cartier and Lynne Eckert	1996	Cultural Resource Evaluation of the Cisco System 4 Project, City of San José	Archaeological Resource Management
S-018457	Suzanne Baker	1996	Archaeological Survey Report, Addendum 1, and Proposal for Extended Phase I Archaeological Testing, Routes 237/880 Interchange Project, Santa Clara County, California	Archaeological/Historical Consultants
S-018523	Suzanne Baker and Jeff A. Parsons	1996	Final Report, Extended Phase I Archaeological Survey Report, Routes 237/880 Interchange Project, Santa Clara County, California, 04-SCL-237/880, PM 8.2/9.6; 8.0/10.1, EA 438611	Archaeological/Historical Consultants

S-018577	Dea Bacchetti	1996	Results of Construction Monitoring of the California Impressions Residential Development, San José, Santa Clara County, CA.	Archaeological Resource Service
S-018730	Woodward-Clyde Consultants	1994	Results of Site Evaluation Conducted at the Location Recorded as SCL-675 (Draft)	Woodward-Clyde Consultants
S-019062	Randy S. Wiberg	1997	Archaeological Reconnaissance of the Moitozo Property on North First Street, in the City of San José, California	Holman & Associates
S-019132	Glory Anne Laffey and Charlene Duval	1997	Historical and Architectural Assessment of the Moitozo Property on North First Street between River Oaks Parkway and Baypointe Drive, City of San José, County of Santa Clara	Archives & Architecture
S-019213	Randy S. Wiberg	1997	Archaeological Mechanical Testing of the Moitozo Property on North First Street, San José, California	Holman & Associates
S-019390	Archaeological Resource Management	1996	Cultural Resource Evaluation for the Samsung Project in the City of San José	Archaeological Resource Management
S-019886	Riordan L. Goodwin	1997	Archaeological Monitoring Report for the Tasman Bridges Project, in the City of San José, Santa Clara County, California	Holman & Associates
S-020177	Robert Cartier	1998	Cultural Resource Evaluation of the Cisco Milpitas Project in the City of Milpitas	Archaeological Resource Management
S-020178	Archaeological Resource Management	1998	Cultural Resource Evaluation of the Cisco Alviso Project in the City of Alviso	Archaeological Resource Management
S-020423	Archaeological Resource Management	1998	Cultural Resources Evaluation of Approximately Seven Acres of Land for the Cisco Systems Project on Tasman Drive in the City of San José	Archaeological Resource Management
S-020697	Miley P. Holman	1996	Archaeological Field Inspection of the Novellus Building #6, San José, Santa Clara County, California (letter report)	
S-021061	Archaeological Resource Management	1998	Archaeological Testing Report for the Cisco-Alviso Project in the City of Alviso	Archaeological Resource Management
S-021140	Stuart A. Guedon	1996	Cultural Resources Assessment, Lincoln Property Company Gold Street EIR, Alviso Area, City of San José, Santa Clara County, California	Basin Research Associates
S-021185	Colin I. Busby	1997	Cultural Resources Assessment-Alviso, Block Bounded by North First Street, Michigan Avenue, Archer Street, and Grand Boulevard, City of San José, Santa Clara County (letter report)	Basin Research Associates
S-021232	Laurence H. Shoup, Brian W. Hatoff, and Sean Dexter	1998	Lower Guadalupe River Flood Control Project: Cultural Resources, Archival Research and Archaeological Reconnaissance	URS Greiner Woodward-Clyde
S-021232a	Sean David Dexter	2002	Lower Guadalupe River Flood Control Project: Cultural Resources, Archival Research and Archaeological Reconnaissance, Addendum #1: Baylands Portion	URS Corporation
S-021232b	Sean David Dexter	2002	Lower Guadalupe River Flood Control Project: Cultural Resources, Archival Research and Archaeological Reconnaissance, Addendum #2: State Route 237 and Pond A6 APE modifications	URS Corporation
S-021232c	Santa Clara Valley Water District	2002	Attachment A: Project Description, Programmatic Agreement Among the Army Corps of Engineers, The Santa Clara Valley Water District, The California State Historic Preservation Officer, and the Advisory Council on Historic Preservation, Regarding the Issuance of a Permit Under the Authority of Section 404 of the Clean Water Act for the Santa Clara Valley Water District Lower Guadalupe River Flood Control Project	Santa Clara Valley Water District
S-021232d	Calvin C. Fong and Natalie Linduist	2002	RE: Lower Guadalupe River Flood Control Project	Department of the Army, San Francisco District, Corps of Engineers; California Office of Historic Preservation
S-021390	John Holson, John Edwards, Hannah Ballard, and Lynn Compas	1999	Cultural Resources Survey for PG&E's Proposed Northeast San José Transmission Reinforcement Project	Pacific Legacy, Inc.
S-021533	Basin Research Associates, Inc.	1998	Archaeological Resources Review, CA-SCL-6, Fairway Glen Open Space Site, City of Santa Clara, Santa Clara County, California	Basin Research Associates, Inc.
S-022304	Suzanne Baker	1999	Stage C Archaeological Survey Report, Routes 237/880 Interchange Project, Santa Clara County, California	Archaeological/Historical Consultants

S-023364	Colin I. Busby	1999	Historic Properties Affected or Potentially Affected by the South Bay Water Recycling Program (SBWRP), Phase 2 Master Plan, Tasman Drive Interconnection, SC-2 and SC-4 Segments, Cities of Milpitas and Santa Clara, Santa Clara County (letter report)	Basin Research Associates
S-023441	Elizabeth Krase and Robert Gross	2001	Supplemental Historic Property Survey Report for the Route 237/I-880 Interchange Project, Santa Clara County, California, 04-SCL-237, KP 13.6/15.3, PM 8.5/9.5; 04-SCL-880, KP 13.0/16.3, PM 8.1/10.1; EA 439700	Caltrans
S-023441a	Elizabeth Krase	2001	Historical Architectural Survey Report MOU Short Form, March 19, 2001, Route 237/I-880 Interchange Project, Santa Clara County, California, 04-SCL-237, KP 13.6/15.3, PM 8.5/9.5. 04-SCL-880, KP 13.0/16.3, PM 8.1/10.1, EA 439700	Caltrans
S-023441b	Suzanne Baker	2001	Addendum No. 2, Archaeological Survey Report, Route 237/I-880 Interchange Project, Santa Clara County, California, 04-SCL-237, KP 13.6/15.3, PM 8.5/9.5. 04-SCL-880, KP 13.0/16.3, PM 8.1/10.1, EA 439700	Archaeological/Historical Consultants
S-024246	Archaeological Resource Management	2001	Cultural Resource Evaluation of the Cerone Complex Project in the City of San José	Archaeological Resource Management
S-024247	Robert Cartier	2001	Negative Archaeological Survey Report for the Proposed Cerone Complex Project on the Corner of Zanker Road and Highway 237 in the City of San José, California	Archaeological Resource Management
S-024981	Stuart Guedon	2000	Cultural Resources Assessment, Coyote Creek Trail Project, Cities of Milpitas and San José, Santa Clara County	Basin Research Associates, Inc.
S-025043	David Chavez	2001	Historic Property Survey Report, Route 262/Warren Avenue/I-880 Interchange Reconstruction and I-880 Widening Project, 04-SCL-880-KP 13.2 (PM 8.2)/KP 16.9 (PM 10.5), 04-ALA-880-KP R0.0 (PM R0.0)/KP 4.7 (PM 2.9), 04-ALA-262-KP R0.0 (PM R0.0)/KP R0.7 (PM R0.5), EA 233220	David Chavez & Associates
S-025043a	David Chavez	2001	Archaeological Survey Report, Route 262/Warren Avenue/I-880 Interchange Reconstruction and I-880 Widening Project, Alameda and Santa Clara Counties, California	David Chavez & Associates
S-025043b	Elizabeth Krase	1999	First Addendum, Historic Architecture Survey Report for the Interstate 880/Mission Boulevard Interchange Project in the Cities of Fremont, Alameda County, and Milpitas, Santa Clara County	California Department of Transportation
S-025157	John Nadolski and Michelle St.Clair	2002	Archaeological Investigations for the 3990 Zanker Road, Wireless Communications Site, CA 2472A	Pacific Legacy, Inc.
S-025173	John Holson, Cordelia Sutch, and Stephanie Pau	2002	Cultural Resources Report for San José Local Loops, Level 3 Fiber Optics Project in Santa Clara and Alameda Counties, California	Pacific Legacy, Inc.; William Self Associates, Inc.
S-025263	Miley Holman	2000	Archaeological Field Inspection of the Proposed Boccardo Project Parcels 1,2 ,3, and 4 (APN 015-3-012, 015-39-020, 015-39-026, 015-39-027) Alviso, Santa Clara County, California (letter report)	Holman & Associates
S-025544	Colin Busby	2001	Calpine Los Esteros CEF- Field Inventory for Storm Drain Along Coyote Creek, City of San José, Santa Clara County (letter report)	Basin Research Associates, Inc.
S-026069	Robert Cartier	2001	Negative Historic Property Survey Report For the Proposed Cerone Complex Project on the Corner of Zanker Road and Highway 237 in the City of San José, California.	Archaeological Resource Management
S-026070	Robert Cartier	2001	Archaeological Survey Report for the Proposed Cerone Complex Project on the Corner of Zanker Road and Highway 237 In the City of San José, California.	Archaeological Resource Management
S-027648	Heather Price and Jennifer Price	2003	Archaeological Subsurface Testing, Elmwood Surplus Lands, Milpitas, Santa Clara County, California	William Self Associates, Inc.
S-027648a	William Self	2004	Archaeological Test Trenching at Elmwood Surplus Lands (West Side) (letter report)	William Self Associates, Inc.
S-027648b	Thomas Young, Jason Coleman, Aimee Arrigoni, Trevor Self, Amanda Maples, David Buckley, and Connie Moreno	2007	Archaeological Monitoring Report, Elmwood Surplus Lands, Milpitas, Santa Clara County, California	William Self Associates, Inc.
S-027960	Michael Dice	2003	Cultural Resource Evaluation of Sprint Telecommunications Facility Candidate SF33XC400D (VTA/Nextel), 3990 Zanker Road, San José, Santa Clara County, California (letter report)	Michael Brandman Associates

S-028011	Colin I. Busby	2002	Archaeological Monitoring of Haz Mat Testing within Ulistac Natural Area, City of Santa Clara (letter report)	Basin Research Associates, Inc.
S-029222	Lorna Billat	2000	Nextel Communications Wireless Telecommunications Service Facility - Santa Clara County, Nextel Site No. (CA-0269J)/ East Alviso (letter report)	Earth Touch, Inc
S-030585	Basin Research Associates, Inc.	2004	Archaeological Monitoring Closure Report, 2003-2004, VTA Cerone Complex Improvements Project, Phase 1 (Contract No. 02079), 3990 Zanker Road, City of San José, Santa Clara County, California	Basin Research Associates, Inc.
S-031438	Robert Cartier	2004	Cultural Resource Evaluation of the Project at APN 015-11-077 in the City of San José	Archaeological Resource Management
S-031493	Robert R. Cartier	2004	Cultural Resource Evaluation of the Project at 1391 State Street, Alviso, in the City of San José	Archaeological Resource Management
S-031493a	Robert Cartier	2005	Historical evaluation of the structure at 1391 State Street, Alviso, in the City of San José (letter report)	Archaeological Resource Management
S-031584	Miley Paul Holman	2005	A Summary of Findings from the Mechanical Subsurface Presence/Absence Testing of the Murphy Ranch Project Area, Milpitas, Santa Clara County, California	Holman & Associates
S-031873	Colin I. Busby	2002	McCarthy Boulevard - Tasman Drive Intersection, D-09 Cultural Resources Archaeological Monitoring Services - P.O. C6 09304 (letter report)	Basin Research Associates, Inc.
S-033003	Colin I. Busby	2006	Archaeological Records and Limited Literature Review, Vista Montana Park Residential Project, City of San José, Santa Clara County (letter report)	Basin Research Associates
S-033004	Colin I. Busby	2006	Archaeological Records and Limited Literature Review, Sobrato Parcel, Vista Montana Park Project, City of San José, Santa Clara County	Basin Research Associates
S-035427	Mark Bowen	2008	Historic Property Survey Report, CMIA I-880 HOV Lane Widening Project, U.S. Highway 101 to State Route 237, 04-SCL-880 PM 4.1/8.7, VTA Contract No. S07057, Caltrans EA 04-298300	ICF Jones & Stokes
S-035427a	Mark Bowen	2008	Historical Resources Evaluation Report, I-880 HOV Lane Widening Project, U.S. Highway 101 to State Route 237, 04-SCL-880 PM 4.1/8.7, VTA Contract No. S07057	ICF Jones & Stokes
S-035427b	Alisa Reynolds	2008	Archaeological Survey Report, I-880 HOV Lane Widening Project, U.S. Highway 101 to State Route 237, 04-SCL-880 PM 4.1/8.7, VTA Contract No. S-07057	ICF Jones & Stokes
S-036227	Philip Kaijankowski and Jack Meyer	2009	Subsurface Geoarchaeological Explorations for the Guadalupe River Crossing Site, Bay Division Pipelines 3 and 4 Crossover Facilities Project, Santa Clara, California	Far Western Anthropological Research Group, Inc.
S-036824	Christopher Canzonieri	2009	Historic Property Survey Report, Bay Trail Reach 9/9B Project (Between Gold Street and San Tomas Aquinas Creek Trail), Alviso, City of San José, Santa Clara County (04-SCL-0-SJS HPLUL-5005 (086)	Basin Research Associates
S-036828	Colin I. Busby	2009	Revised October 2009--Archaeological Survey Report, Bay Trail Reach 9/9B Project (Between Gold Street and San Tomas Aquino Creek Trail), Alviso, City of San José, Santa Clara County, 04-SCL-0-SJS HPLUL-5005 (086)	Basin Research Associates
S-037092	Basin Research Associates, Inc.	2010	Historic Property Survey Report/Finding of Effect South Bay Water Recycling (SBWR) Stimulus Projects, Milpitas Light Rail Median, City of Milpitas, Santa Clara County, BUR100401A	Basin Research Associates, Inc.
S-037092a	Basin Research Associates	2010	Historic Properties Survey Report/ Finding of Effect, South Bay Water Recycling (SBWR) Stimulus Projects, San José Perimeter Road, City of San José, Santa Clara County	Basin Research Associates
S-037096	Alisa Reynolds and Joanne Grant	2010	Archaeological Extended Phase I Report, South Bay Advanced Recycled Water Treatment Facility, Santa Clara Valley Water District, Santa Clara County, California; BUR100125B	ICF Jones & Stokes
S-037096a	Joanne Grant and Alisa Reynolds	2010	Cultural Resources Survey for the South Bay Advanced Recycled Water Treatment Project - Environmental Assessment / Initial Study (EA/IS) - Mitigated Negative Declaration (MND) Addendum	ICF International
S-037533	Carrie D. Wills	2010	Cultural Resources Records Search and Site Visit for T-Mobile West Corporation, a Delaware Corporation (T-Mobile) Candidate SF44502-A (VTA Cerone), 3990 Zanker Road, San José, Santa Clara County, California.	Michael Brandman Associates
S-037893	Jennifer Thomas	2011	L132 Gas Line Replacement Project - Cultural Resources	Far Western

			Investigation	Anthropological Research Group, Inc.
S-037924	Donna M. Garaventa and Colin I. Busby	2010	Completion of Archaeological Monitoring Guadalupe River Crossover Facility Utility Corridor, City of Santa Clara, Bay Division Pipelines 3 & 4, Crossover Facility Project, Consulting Agreement No. W8-X860-00-S09-0014, Construction Management Services (CS-914), Subtask Number 4.6.12 (JE Charge Code W8X86004), Contract No. WD-2568 (letter report)	Basin Research Associates
S-037924a	Brian F. Byrd	2009	Archaeological Monitoring Plan, Guadalupe River Crossover Facility Utility Corridor, Bay Division Pipelines 3 and 4, Crossover Facilities Project, San Francisco Public Utilities Commission, Santa Clara County, California	Far Western Anthropological Research Group, Inc.
S-037924b	Brian F. Byrd	2009	Accidental Discovery Measures and Treatment of Human Remains, Bay Division Pipelines 3 and 4, Crossover Facilities Project, San Francisco Public Utilities Commission, Santa Clara and San Mateo Counties, California	Far Western Anthropological Research Group, Inc.
S-038765	Jennifer Thomas	2012	Cultural Resources Study for the Line 109 107.6EW Station 81+65 ECDA Project, Santa Clara County, California	Far Western Anthropological Research Group, Inc.
S-039039	Colin I. Busby	2008	Archaeological Closure Report, FY 2007-2008 Capital Improvement Program, Fire Main Replacement Project, San José/Santa Clara Water Pollution Control Plan, Santa Clara County (letter report)	Basin Research Associates, Inc.
S-039069	Basin Research Associates	2009	Archaeological Assessment Report, Nortech Parkway East Loop Main Project, City of San José, Santa Clara County	Basin Research Associates
S-039266	Jennifer Thomas and Jack Meyer	2012	Cultural Resources Study for the Line 101 South ILI Upgrade Project, Santa Clara County, California	Far Western Anthropological Research Group, Inc.
S-039518	Robert Cartier	1993	Photodocumentation of the Shaughnessy-Murphy Ranchstead	Archaeological Resource Management
S-042844	Amy Foutch	2012	PG&E External Corrosion Direct Assessment (ECDA) on Line EW08 101 Station 0+07, Santa Clara, California (letter report)	Far Western Anthropological Research Group, Inc.
S-044036	Jessica Kusz and Sarah Winder	2011	Historic Resource Evaluation Report, Coyote Creek Trail-State Route 237 to Story Road, San José, Santa Clara County, California, 4-[SCL]-0-SJ, HP LUL 5005(087)	Archives & Architecture, LLC
S-044036a	Colin I. Busby	2011	Archaeological Survey Report, Coyote Creek Trail, State Route 237 to Story Road, City of San José, Santa Clara County, California, 4-[SCL]-0-SJ, HP LUL 5005(087), City of San José	Basin Research Associates, Inc.
S-044036b	Colin Busby	2012	Historic Property Survey Report, Coyote Creek Trail Project, San José, HPLUL-5005 (087)	Basin Research Associates
S-046399	Laura Leach-Palm and Chandra Miller	2015	Historic Property Survey Report for the MTC Interstate 880 Express Lane Phase I Project, Alameda and Santa Clara Counties, California: State Route 84 04-ALA-84 PM R3.0-R6.1, State Route 92 04-ALA-92 PM R2.5-R6.5, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 PM R0.0-26.4, EA 04-3G920	Far Western Anthropological Research Group, Inc.
S-046399a	Laura Leach-Palm and Philip Kaijankonski	2015	Archaeological Survey Report for the MTC Interstate 880 Express Lane Phase I Project, Alameda and Santa Clara Counties, California: State Route 84, 04-ALA-84 PM R3.0-R6.1, State Route 92, 04-ALA-92 PM R2.5-R6.5, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 PM R0.0-26.4, EA 04-3G920	Far Western Anthropological Research Group, Inc.
S-046399b	Philip Kaijankoski, Jack Meyer, and Laura Leach-Palm	2015	Extended Phase I Report for the MTC Express Lane Project, Alameda and Santa Clara Counties, California: State Route 84, 04-ALA-84 PM R3.0-R6.1, State Route 92, 04-ALA-92 PM R2.5-R6.5, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 PM R0.0-26.4, EA 04-3G920	Far Western Anthropological Research Group, Inc.
S-046399c	Laura Leach-Palm	2015	Environmentally Sensitive Area Action Plan for the Metropolitan Transportation Commission's Interstate 880 Express, Lane Phase I Project, Alameda and Santa Clara Counties, California: State Route 84, 04-ALA-84 PM R3.0-R6.1, State Route 92, 04-ALA-92 PM R2.5-R6.5, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 PM R0.0-26.4, EA 04-3G920	Far Western Anthropological Research Group, Inc.

S-046399d	Chandra Miller	2015	Historic Resource Evaluation Report for the MTC Express Lanes I-880 Project, Alameda and Santa Clara Counties, California: 04-SCL-880 PM 7.38-10.5, 04-ALA-880 PM R0.0-26.66, 04-ALA-92 PM R2.29-6.73, 04-ALA-84 PM R2.7-6.22, Project EA: 04-3G920, EIF 041000110	JRP Historical Consulting, LLC
S-046399e	Adrian R. Whitaker	2016	Supplemental Archaeological Survey Report for the MTC Interstate 880 Express Lane Phase I Project, Alameda and Santa Clara Counties, California, Interstate 880, 04-SCL-880 PM 7.5-10.5, 04-ALA-880 P< R0.0-26.4, EA 04-3G920	Far Western Anthropological Research Group, Inc.
S-046599	Philip Kaijankoski, Jack Meyer, and Laura Leach-Palm	2015	Extended Phase I Investigation for the Alameda Interstate 880 Median Barrier Replacement Project, Alameda County, California	Far Western Anthropological Research Group, Inc.
S-046872	Miley Paul Holman	2011	Cultural Resources Study of the Spreckles Sanitary Sewer Force Main Project, Alviso, Santa Clara County, California - (letter report)	Holman & Associates
S-046874	Miley Paul Holman	2011	Cultural Resource Study of the Northpointe Apartments Project, Corner of Tasman Drive and Zanker Road, San José, Santa Clara County, California - (letter report)	Holman & Associates
S-046878	Miley Paul Holman	2010	A Cultural Resources Study of the Agnews East School Site, San José, Santa Clara County, California	Holman & Associates
S-047097	Sunshine Psota	2015	Archaeological Survey Report of Approximately 36 Acres at 4701 N. 1st Street in the Alviso Area of San José in Santa Clara County, California	Holman & Associates
S-047217	Ruth Todd, Christina Dikas, Jonathon Rusch, William Porter, and Mido Lee	2015	East Agnews Developmental Center, HABS-Style Documentation, San José, CA [14203]	Page & Turnbull
S-047542	Heidi Koenig and Paul Zimmer	2015	Cultural Resources Survey Report San José-Santa Clara Regional Wastewater Facility Construction Enabling Project	Environmental Science Associates
S-047543	Heidi Koenig	2015	Cultural Resources Study for the San José / Santa Clara Regional Wastewater Facility Plant Instrument Air System Upgrade Project (ESA Project #D131002.16)	Environmental Science Associates
S-048265	Eric Wohlgemuth and John Berg	2016	Archaeological Data Recovery of Site CA-SCL-677 for the PG&E Strength Test of Distribution Feeder Main 0807-01 MP 0.435-0.5 (Segment T-1088-15) Project, Santa Clara County, California	Far Western Anthropological Research Group, Inc.
S-049327	Eryn Brennan, Brad Brewster, and Heidi Koenig	2016	San José-Santa Clara Regional Wastewater Facility Capital Improvement Program, Cultural Resources Survey Report (Combined Archaeological Survey Report and Historic Resources Evaluation Report)	Environmental Science Associates
S-049328	Heidi Koenig	2017	Cultural Resources Study for the San José-Santa Clara Regional Wastewater Facility Cogeneration Project (ESA Project #131002.18)	Environmental Science Associates
S-050028	Archeo-Tec, Inc.	2015	Phase I Cultural Resources Evaluation for the Digester and Thickener Facilities Upgrade Project, San José, Santa Clara County, California	Archeo-Tec, Inc.
S-050028a	Allen G. Pastron	2015	Addendum to the Phase I Cultural Resources Evaluation for the Digester and Thickener Facilities Upgrade Project, San José, Santa Clara County, California (letter report)	Archeo-Tec, Inc.
S-051170	Cindy Desgrandchamp	1978	Cultural Resources Survey 04-SC1-17 Proposed Highway Planting and Irrigation on Route 17 in Santa Clara County, Post Miles R20.02/R22.6 04321-358741	California Department of Transportation

Appendix B. Native American Coordination

Additional Information

- California Native Americans
- Cultural Resources
- Strategic Plan
- Commissioners
- Federal Laws and Codes
- State Laws and Codes
- Local Ordinances and Codes
- Additional Information
- Return to CNAHC Home Page

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: Lightspeed Data Center

County Santa Clara

USGS Quadrangle

Name 7.5' Milpitas 1973

Township 6S Range 1W Section(s) N/A

Company/Firm/Agency:
PaleoWest

Contact Person: Christina Alonso

Street Address: 1870 Olympic Blvd St. 100

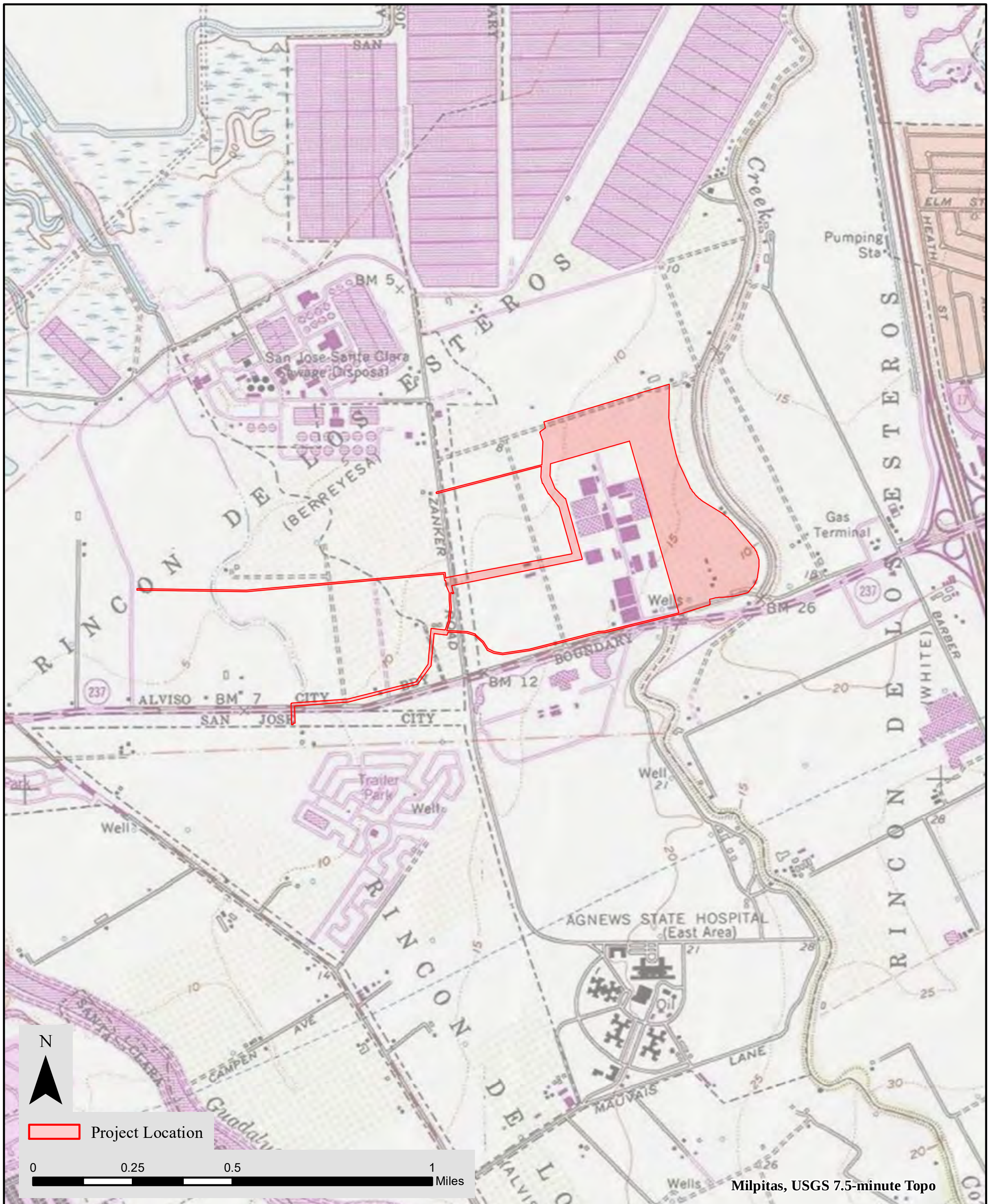
City: Walnut Creek, CA Zip: 94596

Phone: (925) 253-9070

Fax: (925) 254-3553

Email: calonso@paleowest.com

Project Description:



PALEO WEST archaeology

Project Location Map

Lightspeed Data Center Project
Santa Clara County, CA

STATE OF CALIFORNIA Gavin Newsom, Governor
NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov

June 17, 2019

Christina Alonso
PaleoWest Archaeology

VIA Email to: calonso@paleowest.com
Cc: canutes@verizon.net

RE: **Lightspeed Data Center Project**, City of Milpitas; Milpitas USGS Quadrangle, Santa Clara County

Dear Ms. Alonso:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were **positive**. Please contact the **North Valley Yokut Tribe at (209) 887-3415** for more information. Please note the tribe has been cc'd on this letter.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, B.S., M.A., Ph. D
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Santa Clara County
6/17/2019

Amah MutsunTribal Band Valentin Lopez, Chairperson P.O. Box 5272 Galt, CA, 95632 Phone: (916) 743 - 5833 vlopez@amahmutsun.org	Costanoan Northern Valley Yokut
Amah MutsunTribal Band of Mission San Juan Bautista Irenne Zwierlein, Chairperson 789 Canada Road Woodside, CA, 94062 Phone: (650) 851 - 7489 Fax: (650) 332-1526 amahmutsuntribal@gmail.com	Costanoan
Indian Canyon Mutsun Band of Costanoan Ann Marie Sayers, Chairperson P.O. Box 28 Hollister, CA, 95024 Phone: (831) 637 - 4238 ams@indiancanyon.org	Costanoan
Muwekma Ohlone Indian Tribe of the SF Bay Area Charlene Nijmeh, Chairperson 20885 Redwood Road, Suite 232 Castro Valley, CA, 94546 Phone: (408) 464 - 2892 cnijmeh@muwekma.org	Costanoan
North Valley Yokuts Tribe Katherine Erolinda Perez, Chairperson P.O. Box 717 Linden, CA, 95236 Phone: (209) 887 - 3415 canutes@verizon.net	Costanoan Northern Valley Yokut
The Ohlone Indian Tribe Andrew Galvan, P.O. Box 3388 Fremont, CA, 94539 Phone: (510) 882 - 0527 Fax: (510) 687-9393 chochenyo@AOL.com	Bay Miwok Ohlone Patwin Plains Miwok

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Lightspeed Data Center Project, Santa Clara County.

PALEOWEST archaeology
925.253.9070 | paleowest.com | 1870 Olympic Boulevard, Suite 100 | Walnut Creek, CA 94596

July 9, 2019

Andrew Galvan
The Ohlone Indian Tribe
P.O. Box 3388
Fremont, CA 94539
VIA Email to: chochenyo@AOL.com

RE: Lightspeed Data Center Project, City of Santa Clara; Milpitas USGS Quadrangle, Santa Clara County

Dear Mr. Galvan:

PaleoWest has been contracted by Jacobs to prepare a Cultural Resources Assessment Report for the Lightspeed Data Center Project, located in the City of Santa Clara, Santa Clara County. PaleoWest has agreed to conduct a Records Search with the Northwest Information Center (NWIC) of the proposed project area and a 1-mile radius to identify known cultural resource sites and previous surveys in or near the project area. The project is located in in Township 6 South, Range 1 West, in an unnamed Section of the Milpitas 7.5' Topographic Map (1973).

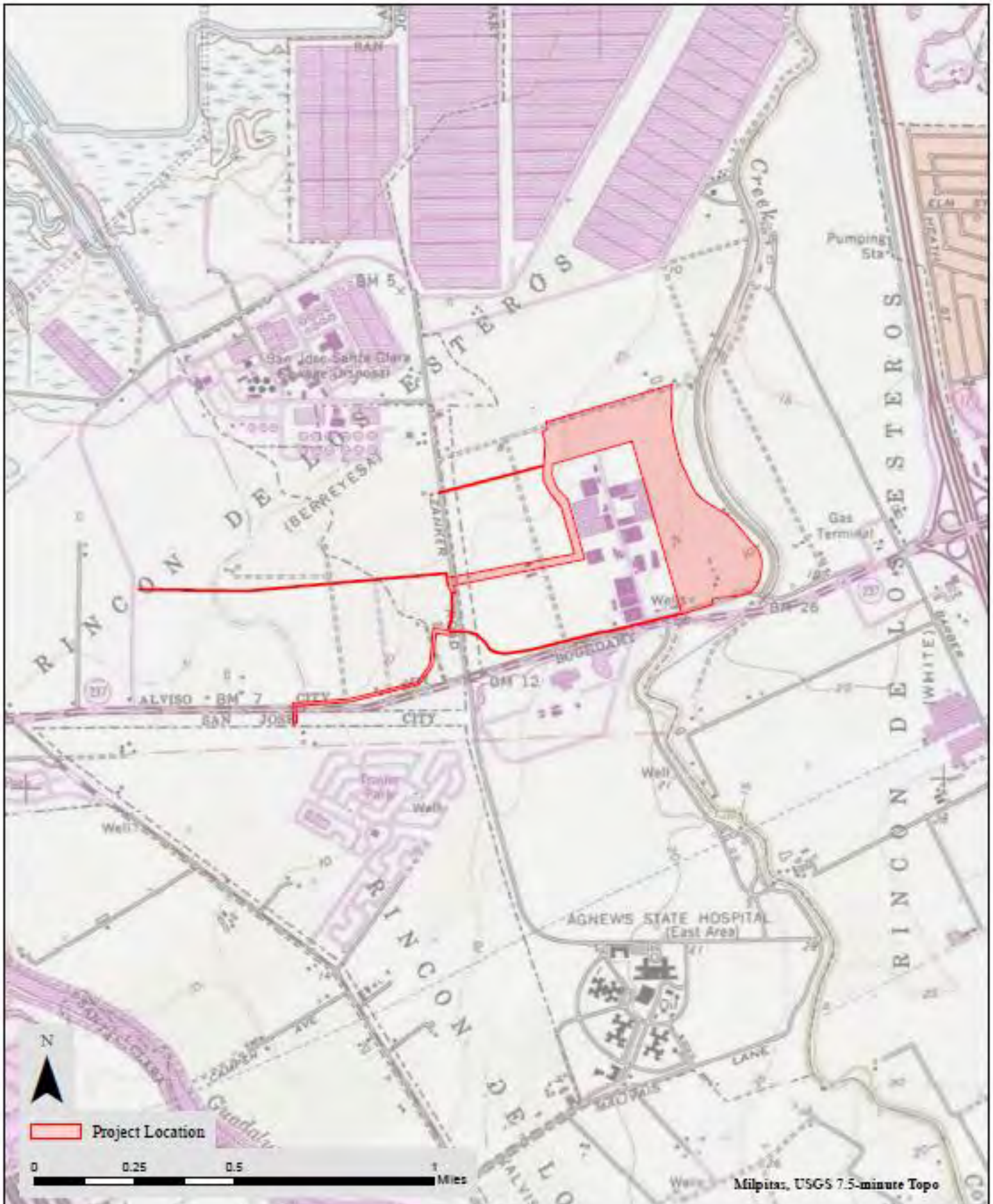
PaleoWest contacted the NAHC on May 29, 2019 with a request that they search their Sacred Lands File for the project vicinity. The June 17, 2019 response from Gayle Totton of the NAHC states, "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive."

We would appreciate receiving any comments, concerns, or information you wish to share regarding cultural resources or sacred sites within the immediate project area. If you could provide your response in writing, at your earliest convenience, to the address below, we will make sure the relevant information is considered in preparing our report. Should you have any questions, I can be reached by e-mail at calonso@paleowest.com or by telephone at (925) 253- 9070, Ext. 321.

Thank you again for your assistance.

Sincerely,

Christina Alonso, M.A., RPA
Senior Archaeologist/Project Manager
Attachment: Map



PALEO WEST archaeology

Project Location Map

Lightspeed Data Center Project
Santa Clara County, CA

PALEOWEST archaeology
925.253.9070 | paleowest.com | 1870 Olympic Boulevard, Suite 100 | Walnut Creek, CA 94596

July 9, 2019

Valentin Lopez
Amah Mutsun Tribal Band
P.O. Box 5272
Galt, CA 95632
VIA Email to: vlopez@amahmutsun.org

RE: Lightspeed Data Center Project, City of Santa Clara; Milpitas USGS Quadrangle, Santa Clara County

Dear Mr. Lopez:

PaleoWest has been contracted by Jacobs to prepare a Cultural Resources Assessment Report for the Lightspeed Data Center Project, located in the City of Santa Clara, Santa Clara County. PaleoWest has agreed to conduct a Records Search with the Northwest Information Center (NWIC) of the proposed project area and a 1-mile radius to identify known cultural resource sites and previous surveys in or near the project area. The project is located in in Township 6 South, Range 1 West, in an unnamed Section of the Milpitas 7.5' Topographic Map (1973).

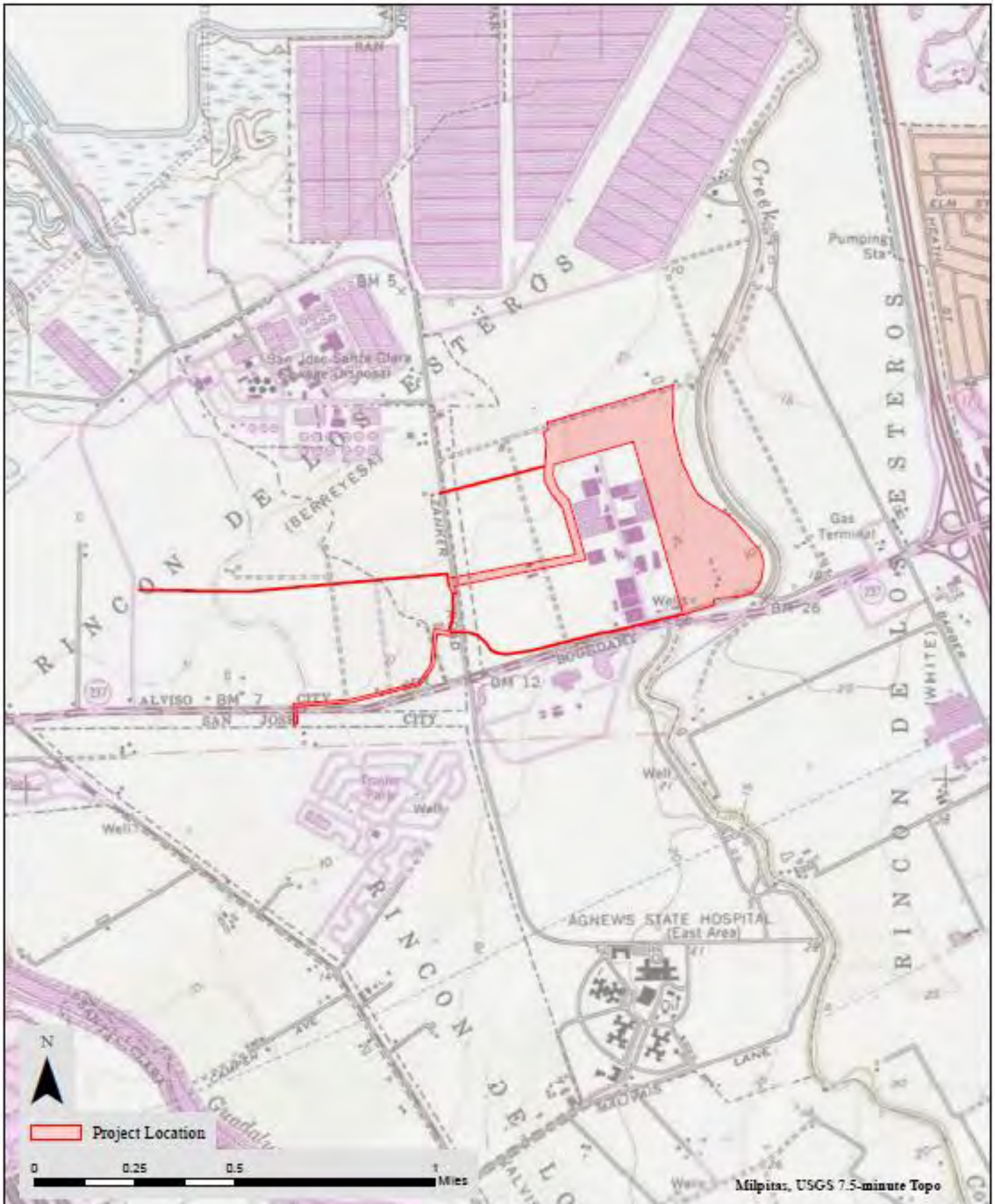
PaleoWest contacted the NAHC on May 29, 2019 with a request that they search their Sacred Lands File for the project vicinity. The June 17, 2019 response from Gayle Totton of the NAHC states, "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive."

We would appreciate receiving any comments, concerns, or information you wish to share regarding cultural resources or sacred sites within the immediate project area. If you could provide your response in writing, at your earliest convenience, to the address below, we will make sure the relevant information is considered in preparing our report. Should you have any questions, I can be reached by e-mail at calonso@paleowest.com or by telephone at (925) 253- 9070, Ext. 321.

Thank you again for your assistance.

Sincerely,

Christina Alonso, M.A., RPA
Senior Archaeologist/Project Manager
Attachment: Map



PALEO WEST archaeology

Project Location Map

Lightspeed Data Center Project
Santa Clara County, CA

July 9, 2019

Charlene Nijmeh, Chairperson
Muwekma Ohlone Indian Tribe of the SF Bay Area
20885 Redwood Road, Suite 232
Castro Valley, CA 94546
VIA Email to: cnijmeh@muwekma.org

RE: Lightspeed Data Center Project, City of Santa Clara; Milpitas USGS Quadrangle, Santa Clara County

Dear Ms. Nijmeh:

PaleoWest has been contracted by Jacobs to prepare a Cultural Resources Assessment Report for the Lightspeed Data Center Project, located in the City of Santa Clara, Santa Clara County. PaleoWest has agreed to conduct a Records Search with the Northwest Information Center (NWIC) of the proposed project area and a 1-mile radius to identify known cultural resource sites and previous surveys in or near the project area. The project is located in in Township 6 South, Range 1 West, in an unnamed Section of the Milpitas 7.5' Topographic Map (1973).

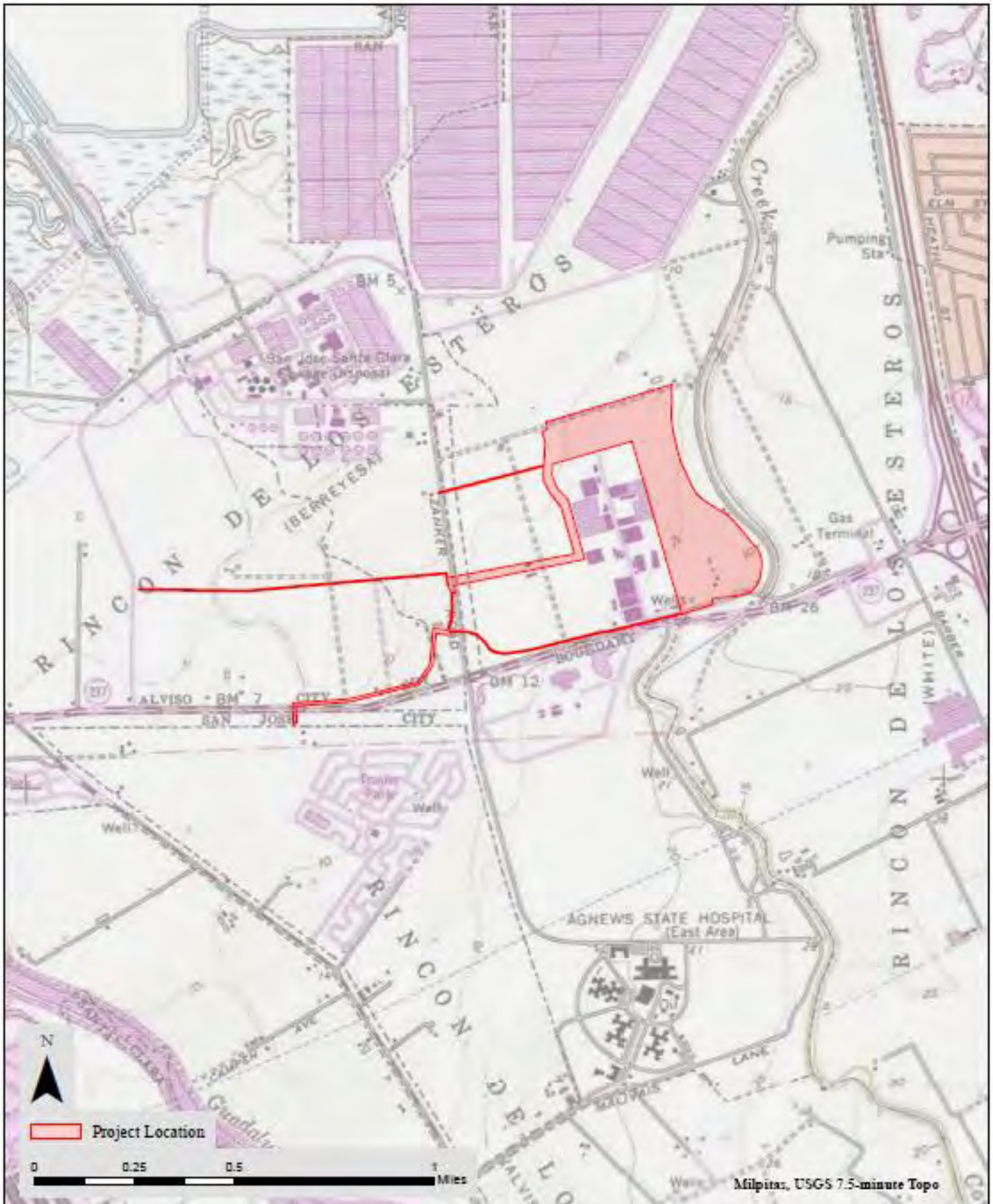
PaleoWest contacted the NAHC on May 29, 2019 with a request that they search their Sacred Lands File for the project vicinity. The June 17, 2019 response from Gayle Totton of the NAHC states, "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive."

We would appreciate receiving any comments, concerns, or information you wish to share regarding cultural resources or sacred sites within the immediate project area. If you could provide your response in writing, at your earliest convenience, to the address below, we will make sure the relevant information is considered in preparing our report. Should you have any questions, I can be reached by e-mail at calonso@paleowest.com or by telephone at (925) 253- 9070, Ext. 321.

Thank you again for your assistance.

Sincerely,

Christina Alonso, M.A., RPA
Senior Archaeologist/Project Manager
Attachment: Map



PALEO WEST archaeology

Project Location Map

Lightspeed Data Center Project
Santa Clara County, CA

July 9, 2019

Katherine Erolinda Perez, Chairperson
North Valley Yokuts Tribe
P.O. Box 717
Linden, CA 95236
VIA Email to: canutes@verizon.net

RE: Lightspeed Data Center Project, City of Santa Clara; Milpitas USGS Quadrangle, Santa Clara County

Dear Ms. Perez:

PaleoWest has been contracted by Jacobs to prepare a Cultural Resources Assessment Report for the Lightspeed Data Center Project, located in the City of Santa Clara, Santa Clara County. PaleoWest has agreed to conduct a Records Search with the Northwest Information Center (NWIC) of the proposed project area and a 1-mile radius to identify known cultural resource sites and previous surveys in or near the project area. The project is located in in Township 6 South, Range 1 West, in an unnamed Section of the Milpitas 7.5' Topographic Map (1973).

PaleoWest contacted the NAHC on May 29, 2019 with a request that they search their Sacred Lands File for the project vicinity. The June 17, 2019 response from Gayle Totton of the NAHC states, "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive."

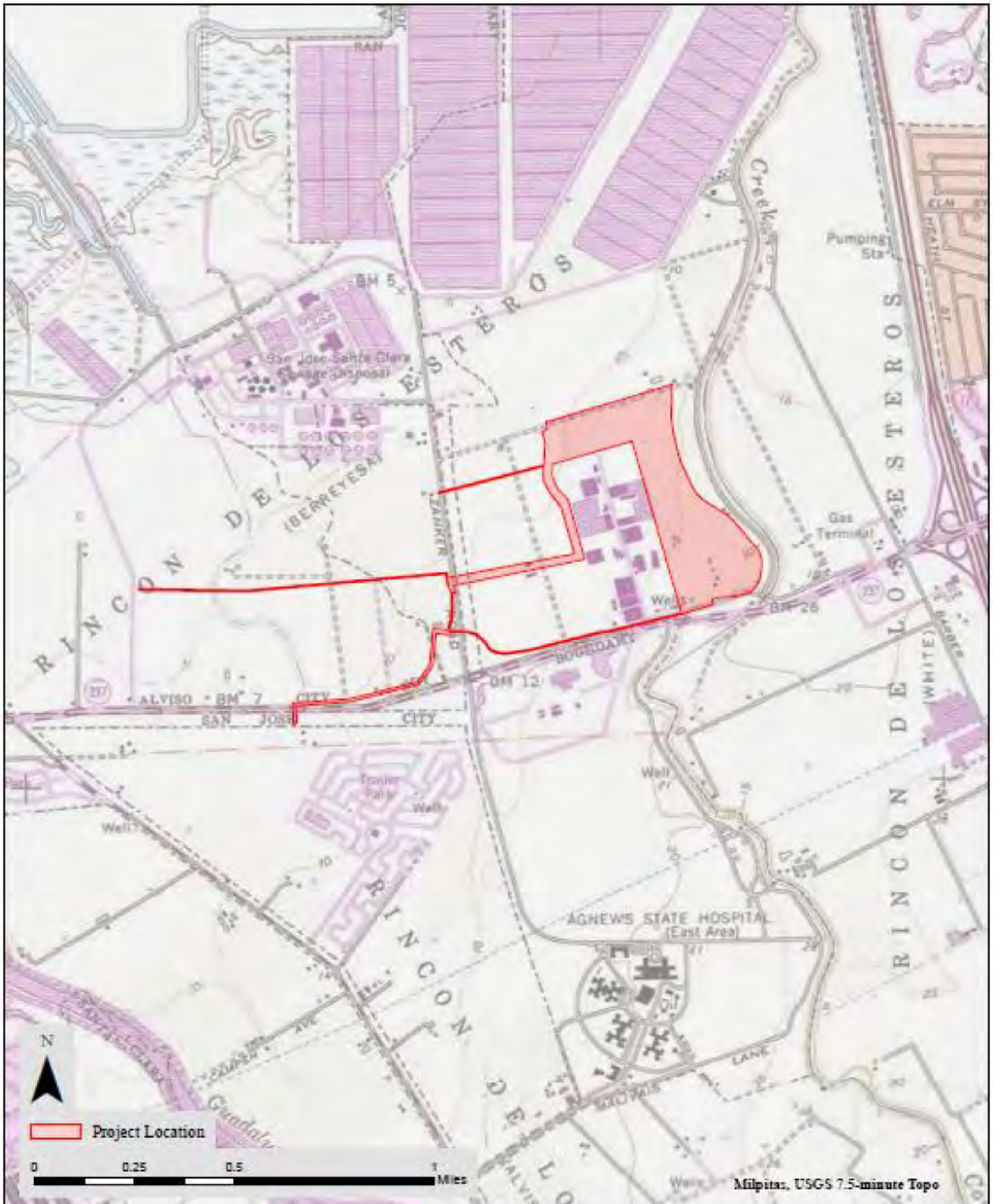
We would appreciate receiving any comments, concerns, or information you wish to share regarding cultural resources or sacred sites within the immediate project area. If you could provide your response in writing, at your earliest convenience, to the address below, we will make sure the relevant information is considered in preparing our report. Should you have any questions, I can be reached by e-mail at calonso@paleowest.com or by telephone at (925) 253- 9070, Ext. 321.

Thank you again for your assistance.

Sincerely,

Christina Alonso

Christina Alonso, M.A., RPA
Senior Archaeologist/Project Manager
Attachment: Map



PALEO WEST archaeology

Project Location Map

Lightspeed Data Center Project
Santa Clara County, CA

PALEOWEST archaeology

925.253.9070 | paleowest.com | 1870 Olympic Boulevard, Suite 100 | Walnut Creek, CA 94596

July 9, 2019

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoans
P.O. Box 28
Hollister, CA 95024
VIA Email to: ams@indiancanyon.org

RE: Lightspeed Data Center Project, City of Santa Clara; Milpitas USGS Quadrangle, Santa Clara County

Dear Ms. Sayers:

PaleoWest has been contracted by Jacobs to prepare a Cultural Resources Assessment Report for the Lightspeed Data Center Project, located in the City of Santa Clara, Santa Clara County. PaleoWest has agreed to conduct a Records Search with the Northwest Information Center (NWIC) of the proposed project area and a 1-mile radius to identify known cultural resource sites and previous surveys in or near the project area. The project is located in in Township 6 South, Range 1 West, in an unnamed Section of the Milpitas 7.5' Topographic Map (1973).

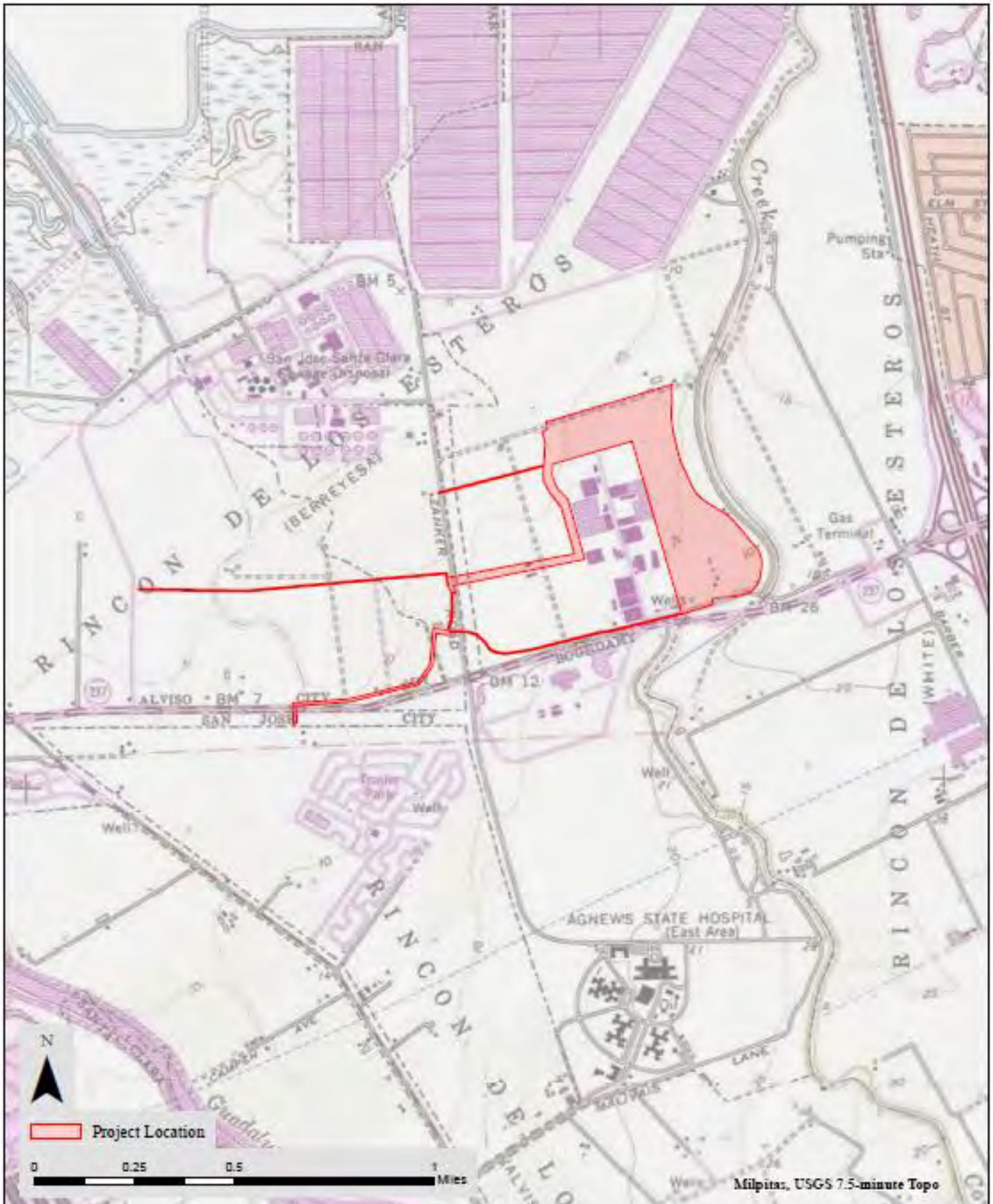
PaleoWest contacted the NAHC on May 29, 2019 with a request that they search their Sacred Lands File for the project vicinity. The June 17, 2019 response from Gayle Totton of the NAHC states, "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive."

We would appreciate receiving any comments, concerns, or information you wish to share regarding cultural resources or sacred sites within the immediate project area. If you could provide your response in writing, at your earliest convenience, to the address below, we will make sure the relevant information is considered in preparing our report. Should you have any questions, I can be reached by e-mail at calonso@paleowest.com or by telephone at (925) 253- 9070, Ext. 321.

Thank you again for your assistance.

Sincerely,

Christina Alonso, M.A., RPA
Senior Archaeologist/Project Manager
Attachment: Map



PALEO WEST archaeology	Project Location Map	Lightspeed Data Center Project Santa Clara County, CA

PALEOWEST archaeology

925.253.9070 | paleowest.com | 1870 Olympic Boulevard, Suite 100 | Walnut Creek, CA 94596

July 9, 2019

Irenne Zwierlein, Chairperson
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062
VIA Email to: amahmutsuntribal@gmail.com

RE: Lightspeed Data Center Project, City of Santa Clara; Milpitas USGS Quadrangle, Santa Clara County

Dear Ms. Zwierlein:

PaleoWest has been contracted by Jacobs to prepare a Cultural Resources Assessment Report for the Lightspeed Data Center Project, located in the City of Santa Clara, Santa Clara County. PaleoWest has agreed to conduct a Records Search with the Northwest Information Center (NWIC) of the proposed project area and a 1-mile radius to identify known cultural resource sites and previous surveys in or near the project area. The project is located in in Township 6 South, Range 1 West, in an unnamed Section of the Milpitas 7.5' Topographic Map (1973).

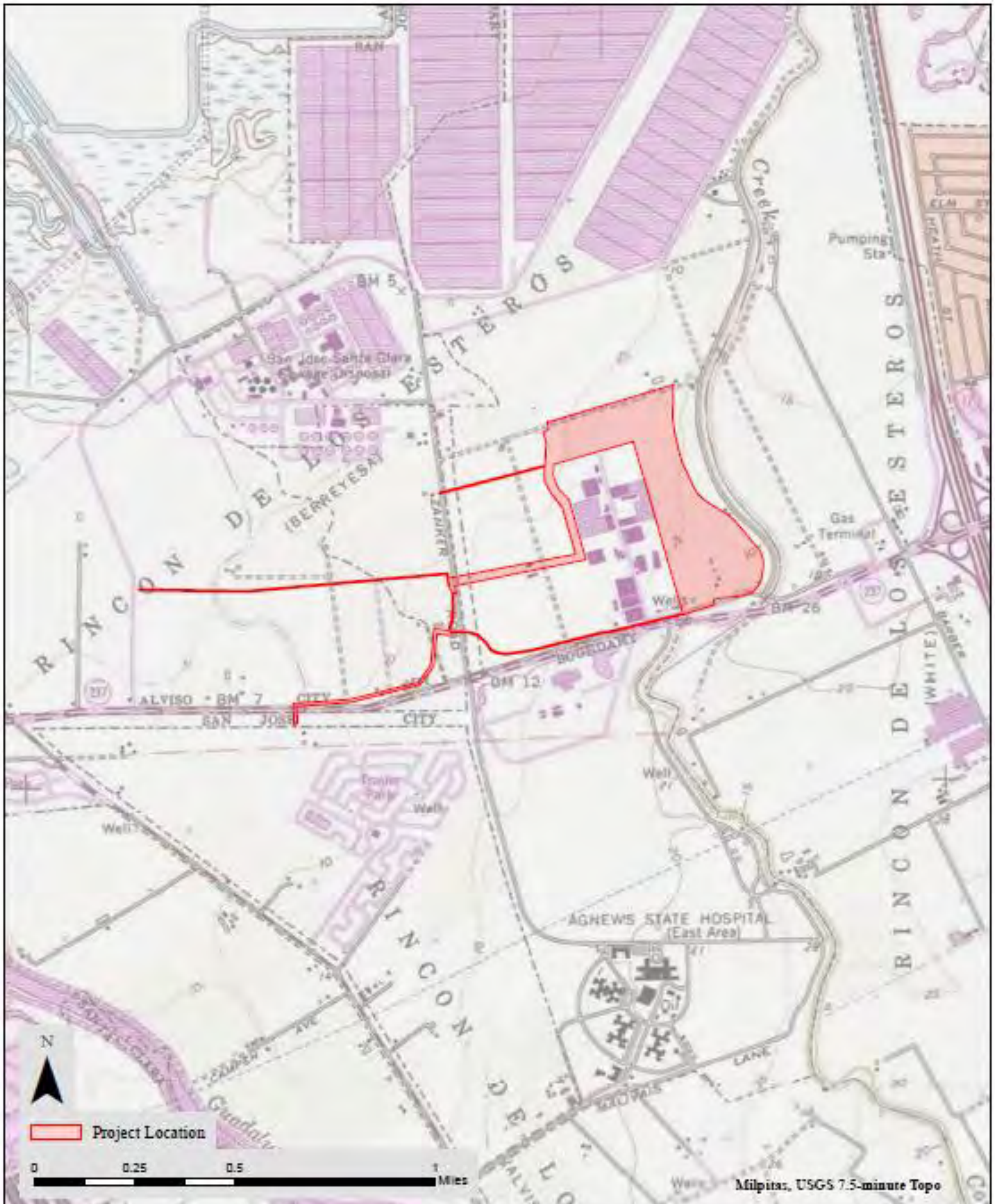
PaleoWest contacted the NAHC on May 29, 2019 with a request that they search their Sacred Lands File for the project vicinity. The June 17, 2019 response from Gayle Totton of the NAHC states, "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive."

We would appreciate receiving any comments, concerns, or information you wish to share regarding cultural resources or sacred sites within the immediate project area. If you could provide your response in writing, at your earliest convenience, to the address below, we will make sure the relevant information is considered in preparing our report. Should you have any questions, I can be reached by e-mail at calonso@paleowest.com or by telephone at (925) 253- 9070, Ext. 321.

Thank you again for your assistance.

Sincerely,

Christina Alonso, M.A., RPA
Senior Archaeologist/Project Manager
Attachment: Map



PALEO WEST archaeology

Project Location Map

Lightspeed Data Center Project
Santa Clara County, CA

Project #19-213: Lightspeed Data Center Project

Table #A-1. Record of Native American Contacts and Comments

Native American Contact	Date of Notification Email	Date of Phone Contact	Comments
Katherine Erolinda Perez, Chairperson North Valley Yokuts Tribe P.O. Box 717 Linden, CA 95236 209-887-3415 canutes@verizon.net	7/9/19	N/A	Ms. Perez responded via email (6/19). She provided recommendations for the project (see email below).
Valentin Lopez, Chairperson Amah Mutsun Tribal Band P.O. Box 5272 Galt, CA 95632 Phone: (916) 743 - 5833 vlopez@amahmutsun.org	7/9/19	7/15/2019 MMW	Spoke with Mr. Lopez on the telephone (7/15). He stated that the project is located outside of his tribal territory and he declined to comment on the project.
Irenne Zwierlein, Chairperson Amah Mutsun Tribal Band of Mission San Juan Bautista 789 Canada Road Woodside, CA 94062 650-851-7489 (cell) 650-851-7747 (office) 650-332-1526 (fax) amahmutsuntribal@gmail.com	7/9/19	7/15/2019 MMW	Spoke with Ms. Zwierlein on the telephone (7/15). She recommends that cultural resources awareness training be provided to the construction crews. She also recommends that if anything is discovered, an archaeological monitor and Native American monitor should be on site.
Ann Marie Sayers, Chairperson Indian Canyon Mutsun Band of Costanoan P.O. Box 28 Hollister, CA 95024 831-637-4238 ams@indiancanyon.org	7/9/19	7/15/2019 MMW	Spoke on the telephone with Ms. Sayers (7/15). She recommends that an archaeological monitor and a Native American monitor be present during all ground disturbing activities.
Charlene Nijmeh, Chairperson Muwekma Ohlone Indian Tribe of the SF Bay Area 20885 Redwood Road, Suite 232 Castro Valley, CA, 94546 Phone: (408) 464 - 2892 cnijmeh@muwekma.org	7/9/19	7/15/2019 MMW	Called (7/15), no answer, left a voicemail message.

Native American Contact	Date of Notification Email	Date of Phone Contact	Comments
Andrew Galvan The Ohlone Indian Tribe P.O. Box 3152 Fremont, CA 94539 510-882-0527 cell 510-687-9393 fax chochenyo@aol.com	7/9/19	7/15/2019 MMW	Called (7/15), no answer, left a voicemail message. Responded 7/16 via email, requested records search results and USGS map. See below.

Re: Lightspeed Data Center Outreach

Christina Alonso

Mon 7/22/2019 11:36 AM

To: cnijmeh@muwekma.org <cnijmeh@muwekma.org>;

Good a. ernoon Ms. Nijmeh,

I am wring t o follow up on the project references below.

We would appreciate receiving any comments, concerns, or informaon y ou wish to share regarding cultural resources or sacred sites within the immediate project area. If you could provide your response in wring , at your earliest convenience, to the address below, we will make sure the relevant informaon is c onsidered in preparing our report. Should you have any quesons, I c an be reached by e-mail at calonso@paleowest.com or by telephone at (925) 253- 9070, Ext. 321.

Thank you very much for your me.

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

From: Chris?na Alonso
Sent: Tuesday, July 9, 2019 1:07:20 PM
To: cnijmeh@muwekma.org <cnijmeh@muwekma.org>
Subject: Lightspeed Data Center Outreach

Good afternoon,

PaleoWest has been contracted by Jacobs to perform a cultural resources assessment of the Lightspeed Data Center Project in the City of Santa Clara, Santa Clara County.

Please find our scoping le�er and project map a�ached.

Thank you very much for your me.

Christina Alonso, M.A., RPA

Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596

925.253.9070 | 925.399.9220 cell | www.paleowest.com

Lightspeed Data Center Outreach

Christina Alonso

Tue 7/9/2019 1:08 PM

To: ams@indiancanyon.org <ams@indiancanyon.org>;

1 attachments (564 KB)

Lightspeed Data Center NA Letter_Sayers.pdf;

Good a. ernoon,

PaleoWest has been contracted by Jacobs to perform a cultural resources assessment of the Lightspeed Data Center Project in the City of Santa Clara, Santa Clara County.

Please find our scoping le�er and project map a�ached.

Thank you very much for your me.

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

Lightspeed Data Center Outreach

Christina Alonso

Tue 7/9/2019 1:08 PM

To: Amah Mutsun <amahmutsuntribal@gmail.com>;

1 attachments (565 KB)

Lightspeed Data Center NA Letter_Zwierlein.pdf;

Good a. ernoon,

PaleoWest has been contracted by Jacobs to perform a cultural resources assessment of the Lightspeed Data Center Project in the City of Santa Clara, Santa Clara County.

Please find our scoping le⍰er and project map a⍰ached.

Thank you very much for your me.

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

Lightspeed Data Center Outreach

Christina Alonso

Tue 7/9/2019 1:03 PM

To: vlopez@amahmutsun.org <vlopez@amahmutsun.org>;

1 attachments (564 KB)

Lightspeed Data Center NA Letter_Lopez.pdf;

Good a. ernoon,

PaleoWest has been contracted by Jacobs to perform a cultural resources assessment of the Lightspeed Data Center Project in the City of Santa Clara, Santa Clara County.

Please find our scoping le�er and project map a�ached.

Thank you very much for your me.

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

Re: Lightspeed Data Center Project

Christina Alonso

Tue 6/18/2019 8:41 PM

To: canutes@verizon.net <canutes@verizon.net>;

Cc: calonso@williamself.com <calonso@williamself.com>;

Hi Kathy!

I just received the contact list from the NAHC this week. I will be drafting our scoping letters next week and sending out.

Thank you for checking in! Please let know if you need anything else.

Best
C

Sent from my iPhone

On Jun 18, 2019, at 7:52 PM, "canutes@verizon.net" <canutes@verizon.net> wrote:

> Hello Christina,
>
> I am not sure you sent me any information regarding the Lightspeed Data Center Project, in the City of Milpitas. Can you please forward any information regarding the proposed project. It would be greatly appreciated.
>
> Thanks,
>
> Nototomne Cultural Preservation
> Northern Valley Yokut / Ohlone / Bay iwuk
> Katherine Perez
> P.O Box 717
> Linden, CA 95236
> Cell: 209.649.8972
> Email: canutes@verizon.net

Re: Lightspeed Datat Center Project

Christina Alonso

Fri 6/21/2019 11:43 AM

To: canutes@verizon.net <canutes@verizon.net>;

Good a. ernoon Kathy!

I just got news that our end of this project is currently on hold while we await some contracng and insur ance clarificaon. Once w e are back up and running I will be sending our official scoping le⍰ers regarding the project.

I will be happy to make a note of your request and follow up with you as soon as we are given the green light to connue our w ork.

Thank you!

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

From: canutes@verizon.net <canutes@verizon.net>
Sent: Wednesday, June 19, 2019 8:29:11 AM
To: Chris⍰na Alonso
Subject: Lightspeed Datat Center Project

Dear Christina Alonso,

On another note form my last email yesterday. The Northern Valley Yokuts Tribe received and email from the Native American Heritage Commission regarding the Lightspeed Data Center Project, City of Milpitas; Milpitas USGS Quadrangle, Santa Clara County (Project) dated, June 17, 2019. A record search of the Native American Heritage Commission

(NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive for a Northern Valley Yokuts sacred site.

I am contacting you in order to:

- Request a site visit for this project;
- Request lead agency or land owner contact information;
- Prior to the site visit, please send us all existing cultural resource assessments, as well as requests for, and the results of, any records searches that may have been conducted.

Thank you for involving the Tribe early in the environmental review and planning process. We ask that you make this communication a part of the final report and will work with you to preserve and protect tribal cultural resources.

Please contact me by phone 209.649.8972 or email at canutes@verizon.net to continue the consultation.

Sincerely,

Katherine Erolinda Perez, Chairwoman

Lightspeed Datat Center Project

canutes@verizon.net

Wed 6/19/2019 8:29 AM

To: Christina Alonso <calonso@paleowest.com>;

Dear Christina Alonso,

On another note form my last email yesterday. The Northern Valley Yokuts Tribe received and email from the Native American Heritage Commission regarding the Lightspeed Data Center Project, City of Milpitas; Milpitas USGS Quadrangle, Santa Clara County (Project) dated, June 17, 2019. A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive for a Northern Valley Yokuts sacred site.

I am contacting you in order to:

- Request a site visit for this project;
- Request lead agency or land owner contact information;
- Prior to the site visit, please send us all existing cultural resource assessments, as well as requests for, and the results of, any records searches that may have been conducted.

Thank you for involving the Tribe early in the environmental review and planning process. We ask that you make this communication a part of the final report and will work with you to preserve and protect tribal cultural resources.

Please contact me by phone 209.649.8972 or email at canutes@verizon.net to continue the consultation.

Sincerely,

Katherine Erolinda Perez, Chairwoman

Re: Lightspeed

Christina Alonso

Thu 7/25/2019 8:44 AM

To: canutes@verizon.net <canutes@verizon.net>;

1 attachments (9 MB)

San Jose Data Center SJC02 CRTR 7_23_19.pdf;

Good morning Kathy,

Per our previous conversaon, her e is a copy of the final Technical Report for the Lightspeed Data Center (now called the San Jose Data Center (SJC02)).

Best,

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

From: canutes@verizon.net <canutes@verizon.net>
Sent: Wednesday, July 17, 2019 10:39:33 AM
To: Chris na Alonso <calonso@paleowest.com>
Subject: Re: Lightspeed

Okay thanks.

Katherine Perez

-----Original Message-----
From: Christina Alonso <calonso@paleowest.com>

To: canutes@verizon.net <canutes@verizon.net>
Sent: Wed, Jul 17, 2019 10:36 am
Subject: Re: Lightspeed

Good morning Ms. Perez.

I will forward this email along to the Lead Agency for the Project who can assist with your requests below.

I can send you a copy of the final Cultural Resources Technical Report which will include the results of the records search for this project. We are finalizing the report now, and should be able to send you a copy shortly.

Thank you for your me, and please le t me know if you have any addional ques ons.

Best,

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

From: canutes@verizon.net <canutes@verizon.net>
Sent: Wednesday, July 17, 2019 10:32:01 AM
To: Chris na Alonso
Subject: Lightspeed

Dear Ms. Alonzo,

Thank you for your letter regarding the Lightspeed Data Center Outreach Project (Project) dated, July 9, 2019. I am contacting you in order to:

- Request a site visit for this project;
- Prior to the site visit, please send us all existing cultural resource assessments, as well as requests for, and the results of, any records searches that may have been conducted.

Thank you for involving the Tribe early in the environmental review and planning process. We ask that you make this communication a part of the final report and will work with you to preserve and protect tribal cultural resources.

Please contact me by phone 209.649.8972 or email at canutes@verizon.net to continue the consultation.

Sincerely,

Katherine Erolinda Perez, Chairwoman

Re: Lightspeed Data Center Outreach

Christina Alonso

Thu 7/25/2019 8:45 AM

Sent Items

To: andrew galvan <chochenyo@aol.com>;

1 attachments (9 MB)

San Jose Data Center SJC02 CRTR 7_23_19.pdf;

Good morning Andy,

Per our previous conversaon, I w anted to send you a copy of the final technical report for the Lightspeed Data Center (now referred to as the San Jose Data Center).

Best,

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

From: Chris na Alonso <calonso@paleowest.com>
Sent: Tuesday, July 16, 2019 12:02:44 PM
To: andrew galvan <chochenyo@aol.com>
Cc: Gayle.To on@nahc.ca.gov <Gayle.To on@nahc.ca.gov>; debbie.treadway@nahc.ca.gov <debbie.treadway@nahc.ca.gov>
Subject: Re: Lightspeed Data Center Outreach

Good a. ernoon Andy,

Our records search came back that there are no prehistoric sites within the Project area, there are a number of prehistoric sites within the 1-mile buffer of the Project Area. I have a▯ached our Project locaon map here.

We can provide you a copy of the report when we complete it, that will provide you with the results of the records search as well as the results of our field survey which has yet to be completed.

Please let me know if this works for you.

Best,

Christina Alonso, M.A., RPA
Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

From: andrew galvan <chochenyo@aol.com>
Sent: Tuesday, July 16, 2019 11:17:45 AM
To: Chris▯na Alonso
Cc: Gayle.To▯on@nahc.ca.gov; debbie.treadway@nahc.ca.gov
Subject: Re: Lightspeed Data Center Outreach

Hi there,

I am aware of numerous precontact sites in the general vicinity, specifically CA-SCI-528. SCI-528 has yielded human remains, midden and artifacts.

Please provide me with a copy of your Lit Search and the accompanying USGS.

Thank you,

Andrew Galvan
The Ohlone Indian Tribe

-----Original Message-----
From: Christina Alonso <calonso@paleowest.com>
To: Andy Galvan <chochenyo@aol.com>
Sent: Tue, Jul 9, 2019 12:55 pm
Subject: Lightspeed Data Center Outreach

Good afternoon,

PaleoWest has been contracted by Jacobs to perform a cultural resources assessment of the Lightspeed Data Center Project in the City of Santa Clara, Santa Clara County.

Please find our scoping le�er and project map a�ached.

Thank you very much for your me.

Christina Alonso, M.A., RPA

Senior Archaeologist, Project Manager

PALEOWEST archaeology

1870 Olympic Boulevard, Suite 100, Walnut Creek, CA 94596
925.253.9070 | 925.399.9220 cell | www.paleowest.com

Appendix C. Photographs

Photo 1. Survey area facing North from Alviso Milpitas Road, South end of survey area

Photo 2. Survey area overview facing South from North end of survey area

Photo 3. Overview of barbed wire fence bordering N edge of survey area, preventing access to northern 50m of survey area

Photo 4. Overview of barbed wire fence bordering W edge of survey area, preventing access to western 50m of survey area

Photo 5. Overview facing S of terrain surrounding energy center

Photo 6. View through fence facing W toward where site 43-003605 indicated on survey map. No building or other resources observed. Barbed wire fence preventing access to linear survey areas in background

Photo 7. Overview of where site 43-003579 indicated on map, no cultural resources observed

Photo 8. View of barbed wire fence preventing access to the northernmost linear survey facing SW

Appendix D.
California Department of Recreation
523 Forms

Appendix D.
California Department of Recreation
523 Forms

State of California — The Resources Agency **DEPARTMENT OF PARKS AND RECREATION** **PRIMARY RECORD**	**Primary #** 43-003578 **HRI #** **Trinomial** **NRHP Status Code**
Other Listings **Review Code** **Reviewer** **Date**	

Page 1 **of** 2 *__Resource Name or #:__ P-43-003578 UPDATE

P1. Other Identifier: 1591 Alviso-Milpitas Road

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Santa Clara

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Milpitas **Date:** 1988 **T** 6S; **R** 1W;**;** Mount Diablo **B.M.**

c. Address: 1591 Alviso-Milpitas Road City: San Jose Zip: 95134

d. UTM: Zone: 10S; 594729 mE/ 4142312 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate): APN 015-31-054

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Centered along the frontage of a large agricultural site north of Highway 237, this house and related ancillary buildings serves as a residential use and farm staging area for the ranch site operated by Cilker Orchards. Mostly hidden within a massing of large shrubs and trees, the one-story National-style vernacular house was built in the nineteenth century, and may have been placed on this site as early as the mid-1890s when owned by William Boots. At that time, buildings are first identified on this site on the first USGS map for this area, surveyed in 1895 and published in 1899. The farm was then 79 acres in size just outside the town of Alviso. Now 65.4 acres in size due to acreage loss to the Coyote Creek channelization, the L-shaped ranch was developed with orchards during the twentieth century, and converted to row crops during the 1970s.

***P3b. Resource Attributes:** (List attributes and codes) HP33. Farm/ranch property

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #)
Facing north; July 16, 2019

***P6. Date Constructed/Age and Sources:**
■Historic
☐Prehistoric ☐Both
Ca. 1899 (USGS Maps)

***P7. Owner and Address:**
James William Henderson
1631 Willow St., #105 San Jose, CA 95125

***P8. Recorded by:** (Name, affiliation, and address)
PaleoWest Archaeology
3990 Old Town Ave., Suite C101
San Diego, CA 92110

***P9. Date Recorded:** July 2019

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Cultural Resource Investigation in Support of the San Jose Data Center (SJC02) Project, San Jose, CA. PaleoWest Archaeology, 2019

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ■Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

*Resource Name or # **(Assigned by recorder)** P-35-003585 UPDATE
*Recorded by: **PaleoWest Archaeology** *Date: July 2019 ☐**Continuation** ■ **Update**

This property was first evaluated by Caltrans District 4 in 1984 and was recommended as not eligible for the NRHP (King 1984). This property was recorded and evaluated for inclusion on the California Register of Historic Resources (CRHR) and as a San Jose City Landmark (Local Register) by Franklin Maggi of Archives & Architecture, Inc. in July of 2016. The property was recommended as ineligible for inclusion on the CRHR or the Local Register (Maggi 2016).

PaleoWest Archaeology revisited the property on July 16, 2019. The current condition of the property appears to be largely unchanged with the exception of addiitonal deteriorated from what was observed during the 2016 field visit.

Based on research and field observations, there is no additional information or changes to the property that could potentially alter the 1984 and 2016 eligibility recommendations made by Caltrans District 4 and Archives & Architecture, Inc. PaleoWest Archaeology concurs with the recommendation made by Caltrans District 4 and Archives & Architecture, Inc. that this property does not appear to be eligible for inclusion on the NRHP, CRHR, or the Local Register under any criteria.

***B12. References (Continued):**

Maggi, Franklin
2016 237 Industrial Center (Cilker Family Properties) Historic Report. Prepared for David J. Powers & Associates, Inc. by Archives & Architecture, San Jose, CA.

King, Gregory
1984 DPR 523 Series Forms for P-43-003578. On file at the NWIC.

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION CONTINUATION SHEET	Primary # **43-003579 UPDATE** HRI# Trinomial

Page 1 of 1 *Resource Name or # **(Assigned by recorder)** P-35-003579 UPDATE

*Recorded by: **PaleoWest Archaeology** *Date: July 2019 ☐**Continuation** ■ **Update**

This property was first evaluated by Caltrans District 4 in 1984 and was recommended as not eligible for the NRHP (King 1984).

PaleoWest Archaeology revisited the property on July 16, 2019 and determined that the property is no lomger extant.

***B12. References:**

King, Gregory
1984 DPR 523 Series Forms for P-43-003579. On file at the NWIC.

View of fomer location of P-43-03579, facing north

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 43-003585
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or #: P-43-003585 UPDATE

P1. Other Identifier: 1657 Alviso-Milpitas Road
***P2. Location:** ☐ Not for Publication ■ Unrestricted ***a. County:** Santa Clara
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Milpitas **Date:** 1988 **T** 6S; **R** 1W;; Mount Diablo **B.M.**
c. Address: 1657 Alviso-Milpitas Road City: San Jose Zip: 95134
d. UTM: Zone: 11; 509798 mE/ 3753301 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate): APN 015-31-054

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The building located at 1657 Alviso-Milpitas Road is a one-story Craftsman Prairie-style house with Mission Revival influences was built circa 1929-1930 for a farming family who operated a large pear orchard of 79 acres just outside the town of Alviso. Now 65.4 acres in size due to acreage loss from the Coyote Creek channelization, the L-shaped ranch was mostly converted to row crops during the 1970s.

***P3b. Resource Attributes:** (List attributes and codes) HP2. Single-family property
***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #)
Facing south; July 16, 2019

***P6. Date Constructed/Age and Sources:**
■Historic
☐Prehistoric ☐Both
1929-1930 (deeds and directories)

***P7. Owner and Address:**
James William Henderson
1631 Willow St., #105 San Jose, CA 95125

***P8. Recorded by:** (Name, affiliation, and address)
PaleoWest Archaeology
3990 Old Town Ave., Suite C101
San Diego, CA 92110

***P9. Date Recorded:** July 2019

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Cultural Resource Investigation in Support of the San Jose Data Center (SJC02) Project, San Jose, CA. PaleoWest Archaeology, 2019

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ■Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

This property was first evaluated by Caltrans District 4 in 1984 and was recommended as not eligible for the NRHP (King 1984). This property was recorded and evaluated for inclusion on the California Register of Historic Resources (CRHR) and as a San Jose City Landmark (Local Register) by Franklin Maggi of Archives & Architecture, Inc. in July of 2016. The property was recommended as ineligible for inclusion on the CRHR or as a City of San Jose Landmark, however; it was found to be eligible for inclusion on the City of San Jose Historic Resources Inventory (Maggi 2016).

PaleoWest Archaeology revisited the property on July 16, 2019. The current condition of the property appears to have deteriorated from what was observed during the 2016 field visit. Many of the windows have been destroyed and infilled with plywood and the property has been subject to vandalism. The building appears to be abandoned.

Based on research and field observations, there is no additional information or changes to the property that could potentially alter the 1984 and 2016 eligibility recommendations for the NRHP, CRHR, or as a City of San Jose Landmark made by Caltrans District 4 and Archives & Architecture, Inc. PaleoWest Archaeology concurs with the recommendation made by Caltrans District 4 and Archives & Architecture, Inc. that this property does not appear to be eligible for inclusion on the NRHP, CRHR, or as a City Landmark under any criteria. PaleoWest does not concur with the 2016 recommendation that the property is eligible for inclusion on the City of San Jose Historic Resources Inventory. In subsequent years the property has fallen to neglect and vandalism compromising the integrity of the building. While the architect of the building has not been identified, the previous evaluation by Archives & Architecture based part of their evaluation on the assumption that the building was the work of master architects Wolfe & Higgins. No records have been identified to confirm this assumption, as was discussed in the 2016 report. With the adjustments on the City of San Jose's Historic Evaluation Sheet due to the lack of evidence for the involvement of Wolfe & Higgins, the current conditions of the property, and the updated evaluation by PaleoWest staff, P-35-003585 obtains a score of 22.45 for the City of San Jose's Historic Evaluation criteria and is, therefore, not eligible for the City of San Jose's Historic Resources Inventory.

***B12. References (Continued):**

Maggi, Franklin
2016 237 Industrial Center (Cilker Family Properties) Historic Report. Prepared for David J. Powers & Associates, Inc. by Archives & Architecture, San Jose, CA.

King, Gregory
1984 DPR 523 Series Forms for P-43-003585. On file at the NWIC.

HISTORIC EVALUATION SHEET

Historic Resource Name: P-43-003585 (Edgar A. Jackson Ranch House)

Note: Complete all blanks. Use spaces to justify ratings. For example, a rating of "E" on No. 9, Age, would be justified by "Built in 1850".

	Item	Justification	E	VG	G	FP
A.	**VISUAL QUALITY/DESIGN**					
1.	EXTERIOR	The building form, composition, detailing, ornament, artistic merit, and craftsmanship are unremarkable				X
2.	STYLE	The building is an unremarkable and common example of a prairie-style inspired craftsman single-family residence				X
3.	DESIGNER	The architect and designer of the building could not be determined				X
4.	CONSTRUCTION	Of no particular interest				X
5.	SUPPORTIVE ELEMENTS				X	
B.	**HISTORY/ASSOCIATION**					
6.	PERSON/ORGANIZATION			X		
7.	EVENT					X
8.	PATTERNS				X	
9.	AGE				X	
C.	**ENVIRONMENTAL/CONTEXT**					
10.	CONTINUITY				X	
11.	SETTING				X	
12.	FAMILIARITY					X
D.	**INTEGRITY**					
13.	CONDITION	Condition of building has deteriorated due to neglect and vandalism including loss of windows			X	
14.	EXTERIOR ALTERATIONS	Changes due to neglect and vandalism, but overall it is still recognizable			X	
15.	STRUCTURAL REMOVALS	Some features, including windows removed			X	
16.	SITE		X			
E.	**REVERSIBILITY**					
17.	EXTERIOR	Reversible, some original materials missing or badly damaged		X		
F.	**ADDITIONAL CONSIDERATIONS/BONUS POINTS**					
18.	INTERIOR/VISUAL QUALITY	N/A				
19.	HISTORY/ASSOCIATION OF INTERIOR	N/A				
20.	INTERIOR ALTERATIONS	N/A				
21.	REVERSIBILITY/INTERIOR	N/A				
22.	NATIONAL OR CALIFORNIA REGISTER					X

REVIEWED BY: Justin Castells DATE: July 2019

EVALUATION TALLY SHEET (Part I)

		VALUE				
A. VISUAL QUALITY/DESIGN	E	VG	G	FP		
1. EXTERIOR	16	12	6	0	0
2. STYLE	10	8	4	0	0
3. DESIGNER	6	4	2	0	0
4. CONSTRUCTION	10	8	4	0	0
5. SUPPORTIVE ELEMENTS	8	6	3	0	4
			SUBTOTAL:		4

B. HISTORY/ASSOCIATION	E	VG	G	FP	
6. PERSON/ORGANIZATION	20	15	7	0	15
7. EVENT	20	15	7	0	0
8. PATTERNS	12	9	5	0	5
9. AGE	8	6	3	0	3
			SUBTOTAL:		23

C. ENVIRONMENTAL/CONTEXT	E	VG	G	FP	
10. CONTINUITY	8	6	3	0	3
11. SETTING	6	4	2	0	3
12. FAMILIARITY	10	8	4	0	0
			SUBTOTAL:		6

"A" & "C" SUBTOTAL: 10

"B" SUBTOTAL: 23

PRELIMINARY TOTAL: 33
(Sum of A,B & C)

EVALUATION TALLY SHEET (Part II)

		VALUE				
D. INTEGRITY	E	VG	G	FP		
13. CONDITION	--	.03	.05	.10	.05 x *33 = 1.65	*from A, B, C Subtotals
14. EXTERIOR ALTERATIONS	--	.05	.10	.20	.05 x *10 = 0.5	*from A and C Subtotals
	--	.03	.05	.10	.05 x *23 = 1.5	*from B Subtotal
15. STRUCTURAL REMOVALS	--	.20	.30	.40	.30 x *10 = 3	*from A and C Subtotals
	--	.10	.20	.40	.3 x *23 = 6.9	*from B Subtotal
16. SITE	--	.10	.20	.40	. x * = 0	*from B Subtotal

INTEGRITY DEDUCTIONS SUBTOTAL: 13.55

ADJUSTED SUBTOTAL: 33 - 13.55 = 19.45
(Preliminary Total minus Integrity Deductions)

		VALUE			
E. REVERSIBILITY	E	VG	G	FP	
17. EXTERIOR	3	3	2	2	3

TOTAL: 22.45

F. ADDITIONAL CONSIDERATIONS/ BONUS POINTS	E	VG	G	FP	
18. INTERIOR/VISUAL QUALITY	3	3	1	0	
19. HISTORY/ASSOCIATION OF INTERIOR	3	3	1	0	
20. INTERIOR ALTERATIONS	4	4	2	0	
21. REVERSIBILITY/INTERIOR	4	4	2	0	
22. NATIONAL OR CALIFORNIA REGISTER	20	15	10	0	

BONUS POINTS SUBTOTAL: 0

ADJUSTED TOTAL (Plus Bonus Points): 22.45