DOCKETED	
Docket Number:	20-SPPE-02
Project Title:	Lafayette Backup Generating Facility
TN #:	233041-1
Document Title:	LBGF SPPE Application - Part 1
Description:	N/A
Filer:	Scott Galati
Organization:	DayZenLLC
Submitter Role:	Applicant Representative
Submission Date:	5/20/2020 1:47:22 PM
Docketed Date:	5/20/2020

Small Power Plant Exemption Application

Lafayette Data Center

Submitted to

STATE OF CALIFORNIA
ENERGY COMMISSION
SINCE 1975

Prepared by

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May 2020

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SECTION 1.0 INTRODUCTION AND PURPOSE

Digital Realty files this Application for a Small Power Plant Exemption (SPPE Application) pursuant to Public Resources Code Section 25541 and Section 1934 et seq. of the California Energy Commission (Commission) regulations for the 99.8 MW[1] Lafayette Backup Generating Facility (LBGF). The LBGF will consist of a total of forty-four (44) 3-MW diesel fired generators that will be used exclusively to provide up to 99 MW of backup generation to support the Lafayette Data Center (LDC), to be located at 2825 Lafayette Drive in Santa Clara, California. The LBGF will also include one emergency generator that will provide 0.8 MW of backup electricity for the three story administrative/office areas of the LDC (hereinafter referred to as the Power Base Building or PBB[2]) on the west end of the LDC building and northeast corner of the LDC building. Figure 1.2-1, Figure 1.2-2, and Figure 1.2-3 depict the location of the LDC and the LBGF, while Figure 2.3-1 shows the site plan.

Unlike the typical electrical generating facility reviewed by the Commission, the LBGF is designed to operate only when electricity from Silicon Valley Power (SVP) is unavailable to the LDC. The LBGF will not be electrically interconnected to the electrical transmission grid. Rather, it will consist of one generation yard electrically interconnected solely to the LDC.

Section 2.0 of the SPPE Application provides a detailed description of the construction and proposed operation of the LBGF. To describe the context of the LBGF and its role in serving the LDC, Section 2.0 also includes a general description of the LDC.

Section 3.0 of the SPPE Application provides project information such as the project title, lead agency contact, project applicant, project location, assessor's parcel number, and general plan and zoning designations.

Section 4.0 of the SPPE Application includes environmental information and analyses in sufficient detail to allow the Commission to conduct an Initial Study consistent with Section 16063(d) of the California Environmental Quality Act (CEQA) Guidelines.

Section 5.0 of the SPPE Application includes a discussion of Alternative backup generation configurations and technology considered by Digital Realty including an evaluation of the No Project Alternative.

Section 6.0 of the SPPE Application includes a list of references.

Section 7.0 of the SPPE Application contains a list of applicable agencies and contact information who have jurisdiction over laws, ordinances, regulations, and standards (LORS) that may be applicable to the LBGF as required by Subsection (i) of Appendix F of the CEC SPPE Regulations.

Section 8.0 of the SPPE Application contains a list of addresses of properties within 1,000 feet of the site for noticing purposes.

[1] Maximum electrical demand of the LDC.
[2] The PBB is part of the LDC structure and not a separate building.

1.1 NEED FOR BACKUP GENERATION

The LDC's purpose is to provide its customers with mission critical space to support their servers, including space conditioning and a steady stream of high-quality power supply. Interruptions of power could lead to server damage or corruption of the data and software stored on the servers by Digital Realty's clients. The LDC will be supplied electricity by SVP through a new distribution substation constructed on the LDC site and owned and operated by SVP.

To ensure a reliable supply of high-quality power, the LGBF was designed to provide backup electricity to the LDC only in the event electricity cannot be supplied from SVP and delivered to the LDC building. To ensure no interruption of electricity service to the servers housed in the LDC building, the servers will be connected to uninterruptible power supply (UPS) systems that store energy and provide near-instantaneous protection from input power interruptions. However, to provide electricity during a prolonged electricity interruption, the UPS systems will require a flexible and reliable backup power generation source to continue supplying steady power to the servers and other equipment. The LBGF provides that backup power generation source.

1.2 COMMISSION SPPE JURISDICTION

Digital Realty acknowledges that the Commission's authorizing statute grants exclusive authority for the Commission to issue licenses for the construction and operation of thermal power plants with generating capacities in excess of 50 MW.[3] For thermal power plants with generating capacities greater than 50 MW but less than 100 MW, the Commission can grant an exemption from its licensing authority[4]. The LBGF is not a typical power generating facility in that it consists of generators that can operate independently. In addition, the generators are arranged to support individual portions of the building within the data center. None of the generators will be interconnected to the electrical transmission system and therefore no electricity can be delivered off site.[5]

1.2.1 Emergency Backup Power Facility

The LBGF will consist of a total of forty-four backup generators, each with a peak rated output capacity of 3 MW and with a continuous steady state output capacity of 2.5 MW and designed to serve individual server suites. The maximum load on each generator will not exceed 2.25 MW when all four generators serving a data center suite are running as described in more detail in Section 2.2.4. The backup generators will be arranged in a single generation yard located on the south sides of the LDC. Additionally, the LGBF will have one 1.0 MW backup generator to serve the PBB.

Based on the methodology adopted by the Commission's Final Decisions Granting SPPEs for the McLaren Backup Generating Facility[6] and the Laurelwood Data Center[7], the maximum generating

[3] Public Resources Code (PRC) Section 25500.
[4] PRC Section 25541 and Title 20 California Code of Regulations (CCR) Section 1934.
[5] The Commission Staff has determined that notwithstanding these facts, the Commission has jurisdiction over the LBGF. Digital Realty reserves all its rights regarding whether or not the Commission has jurisdiction over the LBGF and the filing of this SPPE Application is not an admission by Digital Realty that the Commission has exclusive jurisdiction over the LBGF or the LDC.
[6] CEC-800-2018-003-CMF; 17-SPPE-01; TN 225970
[7] CEC-800-2020-001-CMF; 19-SPPE; TN 232294

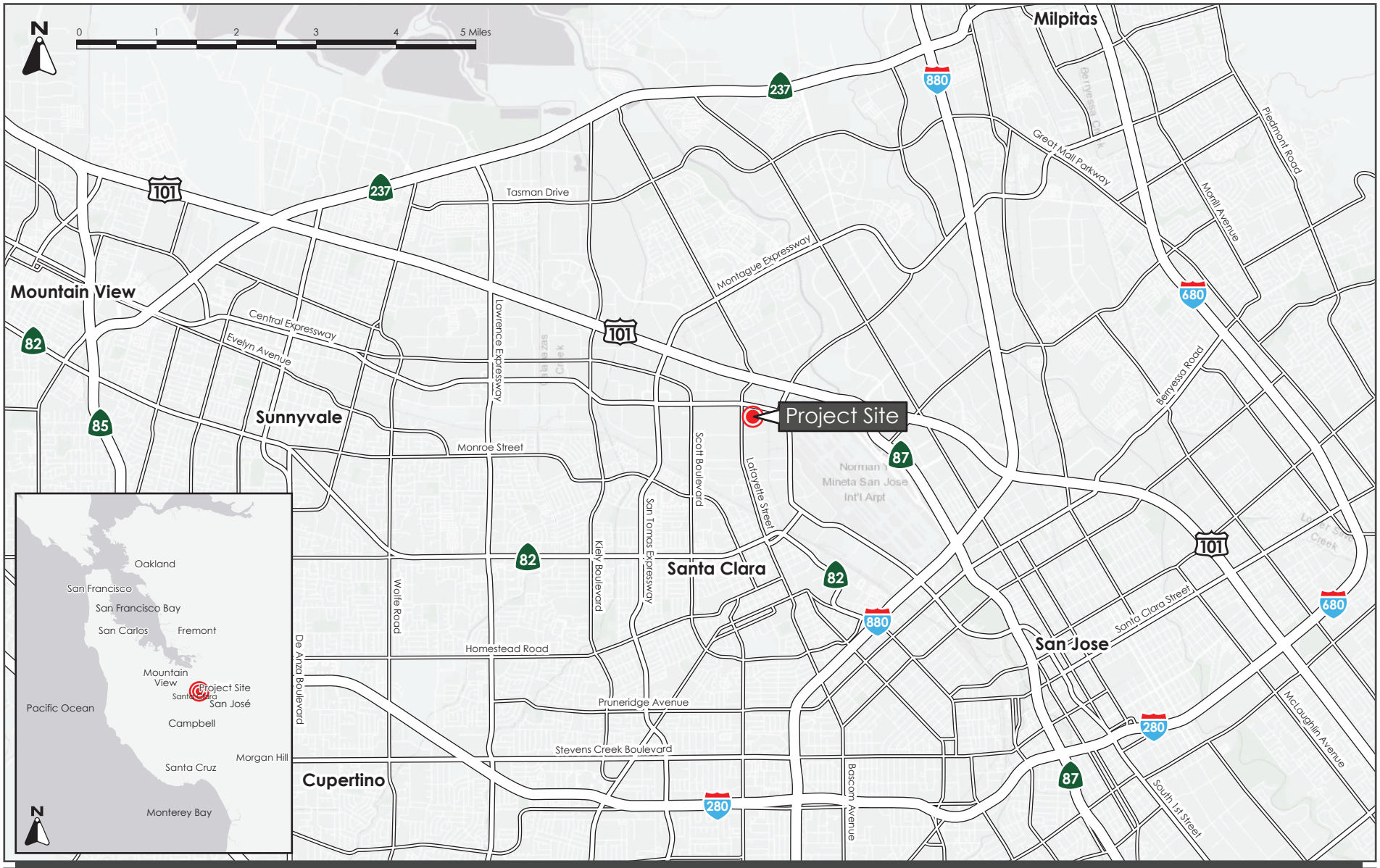
capacity of the LBGF is determined by the maximum of capacity of the load being served. In other words the maximum generating capacity of the LGBF is limited by the combined load of the LDC building since the LBGF is exclusively interconnected to the LDC and is not capable of delivering electricity to any other user or to the electrical transmission system. In the case of the LBGF, the maximum load for the LDC building is 99.8 MW. Therefore, the LBGF's generating capacity is below the 100 MW regulatory threshold and would qualify for consideration under the Commission's SPPE authority.

1.2.2 Data Center Facilities Not Within Scope of SPPE

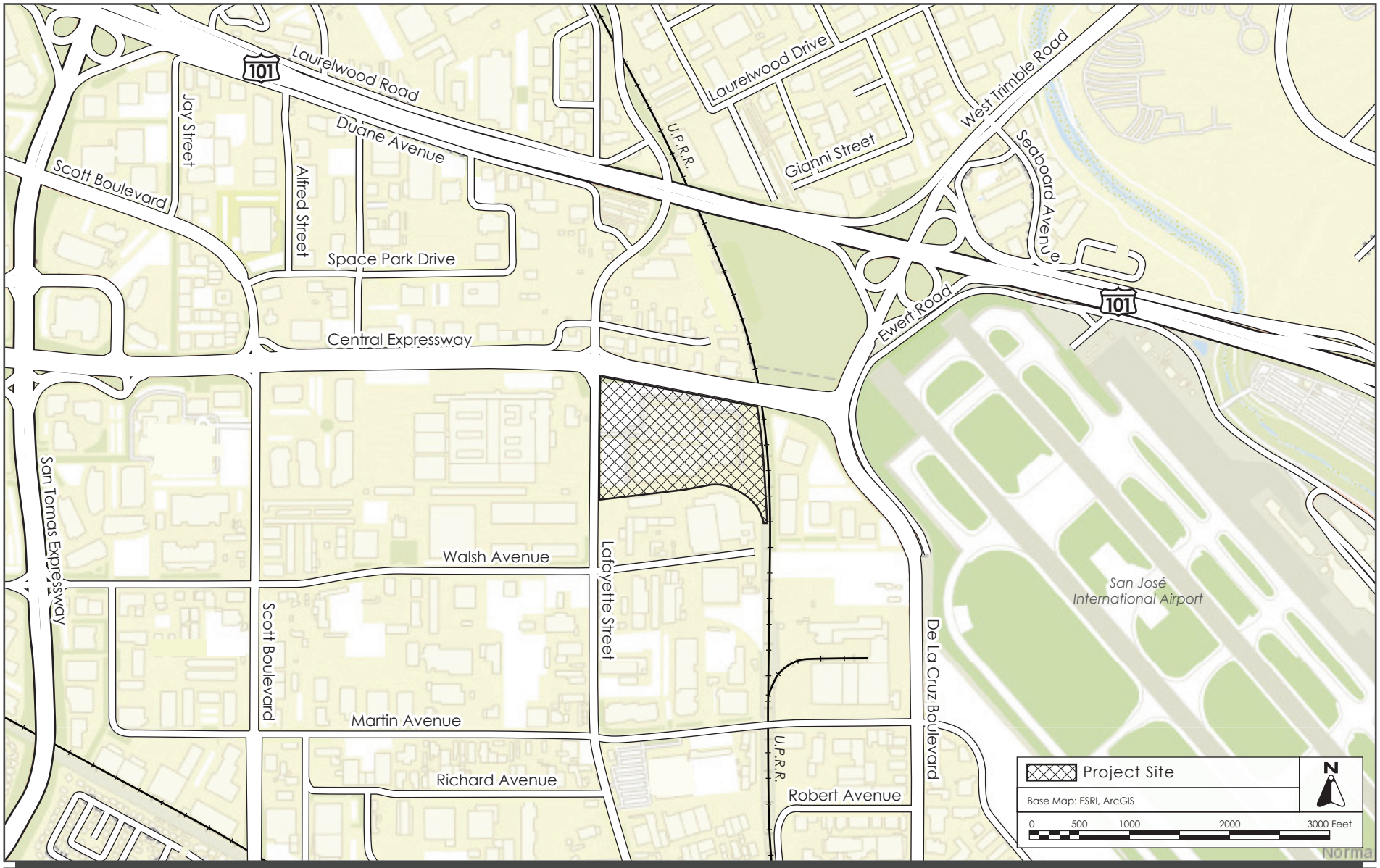
The LDC is not within the scope of the Commission's jurisdiction because it is not a thermal power plant. The LDC is the sole consumer of the electricity produced by the LGBF. Digital Realty submitted an application for a Master Plan to construct and operate the LDC to the City of Santa Clara (City) for review on November 19, 2019. The City has begun its Project Clearance Committee (PCC) review.

Digital Realty believes that although the CEC is the lead agency for making a determination of whether the LBGF is a thermal power plant that can qualify for a SPPE, the ultimate decision does not extend to the LDC facilities. Digital Realty does acknowledge that the CEC should include the potential effects of the LDC in its CEQA analysis, but the ultimate determination of whether the LDC should be approved, denied, or subject to mitigation measures is solely within the City's jurisdiction. To assist the CEC in preparing its (IS/MND) Digital Realty provides a description of the LDC in Section 2.0. The potential effects of the LDC are considered in environmental analyses of Section 4.0 in a manner to assist the Commission in evaluating combined impacts from the co-location of the LBGF and the LDC.

To enable the City to timely conduct its review of the modified LDC, Digital Realty requests the Commission complete its review of the LBGF by October 2020 within its statutory 135-day obligation.



REGIONAL MAP | FIGURE 1.2-1



VICINITY MAP | FIGURE 1.2-2

AERIAL PHOTOGRAPH AND SURROUNDING LAND USES | FIGURE 1.2-3

SECTION 2.0 PROJECT DESCRIPTION

2.1 OVERVIEW OF PROPOSED GENERATING FACILITIES

LBGF will be a backup generating facility with a generation capacity of up to 99.8 MW to support the need for the LDC to provide uninterruptible power supply for its tenant's servers. The LBGF will consist of 44 diesel-fired backup generators arranged in a generation yard located on the south side of the LDC. Project elements will also include switchgear and distribution cabling to interconnect the generators to their respective portion of the buildings.

2.2 GENERATING FACILITY DESCRIPTION, CONSTRUCTION AND OPERATION

2.2.1 Site Description

The proposed LDC site encompasses approximately 15.45 acres and is located at 2825 Lafayette Street in Santa Clara, California, APN 224-04-093. The property is zoned Heavy Industrial. The site is currently developed with two two-story office buildings and associated paved parking and loading dock areas. The total area of the existing office buildings is approximately 326,000 square feet. The existing buildings consist of a mix of architectural styles and materials, including corrugated metal siding, wood, and stucco. The building facades are a mix of materials and architectural styles, including corrugated metal siding, wood and stucco. The project site encompasses a portion of 2805 Lafayette Street, APN 224-04-094, where a substation would be constructed as part of the LDC. There is an existing data center building at 2805 Lafayette Street that is separate from the proposed project.

The two-story office buildings at 2825 and 2845 Lafayette Street would be demolished. The address for the new building of the proposed project would be 2825 Lafayette Street. The main entrance to the 2845 Lafayette Street building is located on north side of the building facing Central Expressway, with a secondary entrance on the west side of the building facing Lafayette Street. The main entrance to the 2825 Lafayette Street building is located on east side of the building facing the railroad tracks, with a secondary entrance on the north side of the building facing Central Expressway.

A raised concrete loading dock is located on west side of the 2845 Lafayette Street building and on the south side of the 2825 Lafayette Street building. The load docks adjoin the paved driveways and paved parking arounds on the west and north side of the 2845 Lafayette Street building and on the north, east, and south side of the 2825 Lafayette Street building. The 2825 and 2845 Lafayette Street buildings share private drive lines and access to Lafayette Street.

Non-native trees and ornamental landscaping are located along the Lafayette Street frontage of the property, as well as the northern, western, and southern property boundaries. The project proposes to demolish the existing shrubs and groundcovers on the site, while protecting-in-place trees not in conflict with proposed utilities, grading, stormwater treatment facilities, and architectural improvements.

The property is bound to the North by Central Expressway, to the South by 2403 Walsh Avenue and a pair of buildings with different industrial uses, to the East by the Union Pacific Railroad (UPRR)

rail line, and to the West by Lafayette Street. The project area consists primarily of industrial land uses. Buildings in the area are similar in height and scale to the existing building on the project site. The Norman Y. Mineta San José International Airport is located approximately 0.3 miles east of the site.

2.2.2 General Site Arrangement and Layout

The 45 backup generators (44 for the data center suites, one for the PBB) will be located at the site in a generation yard adjacent to the south side of the LDC building. Figure 2.4-1 shows the general arrangement and site layout of the LBGF within the LDC site. The PBB generator will be solely connected to the administrative portion of the building located on the LDC building to the west side of the generation yard and at the northeast corner of the LDC.

Each backup generator is a fully independent package system with dedicated fuel tanks located on a skid below the generator. The generation yard will be electrically connected to the LDC building through combination of underground and above ground cable bus to a location within the building that houses electrical distribution equipment.

2.2.3 Generating Capacity

2.2.3.1 *Overview*

In order to determine the generating capacity of the LBGF, it is important to consider and incorporate the following critical and determinative facts.

1. The LBGF uses internal combustion engines and not turbines.
2. The LBGF internal combustion engines have a peak rating and a continuous rating.
3. The LBGF through software technology and electronic devices is controlled exclusively by the (LDC).
4. The LBGF has been designed with 11 systems with a 4-to-make-3 redundancy as described in Section 2.2.3.2
5. There is a total of 11 data center generators which are redundant.
6. The LBGF will only be operated for maintenance, testing and during emergency utility power outages.
7. The LBGF will only operate at a load equal to the demand by the LDC during an emergency utility outage.
8. The LBGF is only interconnected to the LDC and is not interconnected to the transmission or distribution grid.

2.2.3.2 *Generating Capacity and PUE*

Based on the methodology recently adopted by the Commission's Final Decisions Granting a SPPEs for the McLaren Backup Generating Facility and the Laurelwood Data Center, the maximum generating capacity of the LBGF is determined by the maximum of capacity of the load being served.

The design demand of the LDC, which the LBGF has been designed to reliably supply with redundant components during an emergency, is based on the maximum critical IT load and maximum mechanical cooling electrical load occurring during the hottest hour in the last 50 years. Such conditions are possible but extremely unlikely to ever occur. The LDC load on that worst-case day is 99.8 MW, based on 99.0 MW of load in the data center suites and 0.8 MW of load in the PBB.

As described in Section 2.2.4, there are eleven data center suites, each with four 3.0 MW (3,000 kW) generators serving each suite. Only three of the four generators are counted towards the overall capacity of the building, since the system is designed for one generator in each four-generator data center suites to be taken out of service at any moment in time (called '4-to-make-3').

Summary LBGF Calculation:

- 11 Data Center Suites x (3 Generators x 3.0 MW per Generator) = 99.0 MW
- 1 Admin/PBB System x 1 Generator x 1.0 MW per Generator x 0.8 Load Factor = 0.8 MW
- Total LBGF Load: 99.0 MW + 0.8 MW = 99.8 MW

It is important to understand that while the LDC will be designed to accommodate the full IT equipment load of the building, it is Digital Realty's experience that the customers that lease data center space from Digital Realty do not utilize the entire load identified in their lease. This typically results in Digital Realty data center demand loads between 50 and 60 percent. Therefore, a fully leased 99.8 MW data would only be expected to reach a demand load around 60 MW.

The data center industry utilizes a factor called the Power Utilization Efficiency Factor (PUE) to estimate the efficiency of its data centers. The PUE is calculated by dividing the total demand of the data center by the Critical IT load. The theoretical peak PUE for the Worst Day Calculation would be 1.50 (Total 99.0 MW demand of Building on Worst Case Day divided by 66.0 MW Total Critical IT Load). The annual PUE would be 1.42 (Total 93.8 MW demand of Building average conditions divided by 66.0 MW Design Critical IT Load). These PUE estimates are based on design assumptions and represent worst case.

As described above, the expected PUE is much lower because the Critical IT that is leased by clients is rarely fully utilized. Digital Realty's experience with operation of other data centers is that the actual PUE will be closer to 1.30.

2.2.4 Backup Electrical System Design

2.2.4.1 *Overview*

There will be eleven data center suites in the LDC. Each data center suite will be designed to handle 6.0 MW (megawatts) of IT equipment load. The total load of each data center suite will be 9.0 MW which includes the IT equipment load, mechanical equipment to cool the IT equipment load, lighting and data center monitoring equipment. The sum of the eleven data center suite will result in 66.0 MW of IT equipment load and 99.0 of total electrical load.

The load in each data center suite will be served by four electrical "capacity groups" with each electrical capacity group sized at 3.0 MW (3,000 kW) of total power. An electrical capacity group consists of one 3,000 kW generator, one 3,000 kW 12kV-480V medium voltage transformer, one 4,000 ampere 480 volt service switchboard and a 2,000 kW uninterruptible power supply (UPS) system.

The IT equipment will have dual cords that will take power from two different capacity groups. The dual cords are designed to evenly draw power from both cords when power is available on both cords, and automatically draw all of its power from a single cord when power becomes un-available on the other cord.

The data center suite will be designed to continue supporting all of the IT equipment load in the suite when one of the four capacity groups is either scheduled to be out-of-service for maintenance or becomes un-available due to equipment failure. Therefore, the 12.0 MW of total power installed for each data center suite effectively provides only 9.0 MW of total power.

The dual corded IT equipment load gets power from two different capacity groups. Six different cord configurations are used to evenly balance the loads between these pairs of capacity groups: A-B, A-C, A-D, B-C, B-D and C-D.

As an example of the electrical system design, when electrical capacity group A becomes un-available, the IT equipment connected to the A and B electrical capacity group will automatically shift its entire load to the B electrical capacity group. IT equipment connected between the A-C and A-D electrical capacity groups also performs a similar power transfer in the event of an A capacity group failure.

As part of the electrical design, the IT equipment load that started on electrical capacity group A is evenly transferred to the B capacity group (750 kW), C capacity group (750 kW) and D capacity group (750 kW). To allow for this power transfer, each electrical capacity group can only be loaded to 75 percent (2,250 kW of the 3,000 kW electrical capacity group capacity).

The electrical load on each electrical capacity group is monitored by the building automation system. When the any of the electrical capacity groups reach 67.5 percent loaded (based on 90 percent of the 75 percent maximum loading under normal operation), an alarm is activated in the engineering office. The operations staff will work with the tenants to ensure that the leased power levels are not exceeded.

The consequence of electrical capacity groups exceeding 75 percent loaded could lead to dropping IT equipment when coupled with a capacity group failure event. If all the capacity groups serving a data center suite (four capacity groups) are loaded over 75 percent and an electrical capacity group fails, the resulting load transferring to the three available capacity group would exceed the rating of the capacity groups and would lead to over-current protection devices tripping open due to the overload condition. Therefore, it is vital to the reliability of the data center to make sure that all capacity groups remain below 75 percent loaded.

2.2.4.2 *Utility-to-Generator Transfer Control Components and Logic*

In an outdoor rated switchboard located next to the Generator Alternator, there will be a Load Disconnect Breaker that is Normally Closed while the generator is both in and out of operation. From that load disconnect, 480V rated power cable bus, rated for the full ampacity output rating of the generator, will traverse from the generator to a Generator Switchboard, and then into the data center facility terminating on a dedicated Main Generator Input Breaker.

The generator switchboard includes a load bank breaker, allowing each generator to be individually connected to a load bank for periodic maintenance and testing. This breaker is an electrically operated breaker that is normally open when the generator is not in operation, and the Main Switchboard has not requested generator power.

This Generator Main Breaker is electrically interlocked with an adjacent Utility Transformer Main Breaker to allow only one of the Breakers to closed at any time. Upon the loss of utility power, the PLC transfer controller will send a start signal to the generator, followed by the Utility Breaker opening, followed by a confirmation that the generator has started leading to the Generator Main Breaker being closed.

Once the Generator Main Breaker is closed, the power created from the individual generator is then transmitted to the IT equipment (via a 2.0 MW (2,000 kW) uninterruptable power supply (UPS) system) and mechanical equipment designed to cool the IT equipment load served by the UPS. This load is the same load that the dedicated Utility Transformer was supplying power to prior to the utility interruption. Power from this individual generator cannot be transferred to any other load or system, or anywhere outside the facility.

The uninterruptible power supply (UPS) system includes back-up batteries sized for five minutes of battery back-up time. During the time between a transfer between utility and generator power, the UPS system continues to support the IT equipment load without interruption. During a utility-to-generator transfer, the duration of the power outage between the sources will typically be around 15 seconds; it takes around ten seconds to get the generator started and up to voltage. During a generator-to-utility transfer, the duration of the power outage between the sources will typically be around five seconds.

2.2.4.3 *Uninterruptible Power Supply (UPS) System Description*

The UPS System and Batteries are part of the LDC and are not part of the LBGF. However, the following description is provided to describe how the UPS system is intended to operate. The UPS will protect the load against surges, sags, under voltage, and voltage fluctuation. The UPS will have built-in protection against permanent damage to itself and the connected load for all predictable types of malfunctions. The load will be automatically transferred to the bypass line without interruption in the event of an internal UPS malfunction. The status of protective devices will be indicated on a LCD graphic display screen on the front of the UPS. The UPS will operate in the following modes:

- Normal - IGBT Rectifier converts AC input power to DC power for the inverter and for charging the batteries. The IGBT inverter supplies clean and stable AC power continuously

to the critical load. The UPS Inverter output shall be synchronized with the bypass AC source when the bypass source is within the AC input voltage and frequency specifications.

- Loss of Main Power - When Main Power is lost, the battery option shall automatically back up the inverter so there is no interruption of AC power to the critical load.
- Return of Main Power or Generator Power - The system shall recover to the Normal Operating Mode and shall cause no disturbance to the critical load while simultaneously recharging the backup battery.
- Transfer to Bypass AC source - If the UPS becomes overloaded, or an internal fault is detected, the UPS controls shall automatically transfer the critical load from the inverter output to the bypass AC source without interruption. When the overload or internal warning condition is removed, after a preset "hold" period the UPS will automatically re-transfer the critical load from the bypass to the inverter output without interruption of power to the critical load.
- Maintenance Bypass - An optional manual make-before-break maintenance bypass panel may be provided to electrically isolate the UPS for maintenance or test without affecting load operation.

The UPS system batteries will have tab washers mounted on front terminal posts capable of accepting the wiring components of a battery monitoring system. Batteries will have an expected life of ten years. Each battery bank will provide a minimum of five minutes of backup at 100 percent rated inverter load of 1000kW, @ 77°F (25°C), 1.67 end volts per cell, beginning of life.

2.2.5 Generator System Description

Each of the 45 generators for the data center suites will be a Tier-2 standby diesel fired generator equipped with diesel particulate filters (DPF). The generators will be Cummins Model C3000 D6e and the PBB Generator will be a Cummins Model DQGAF.

The maximum peak generating capacity of Model C3000 D6e is 3.0 MW for standby applications (short duration operation). Under normal operation will all generators available for use, the maximum load on each generator is designed to be 2.25 MW. The N+1 redundancy of the generator system is designed for one-out-of-four data center suite generators to be taken out-of-service or unexpectedly fail at any given moment in time (called a '4-to-make-3' design).

The maximum peak generating capacity of Model DQFAD is 1.0 MW for standby applications (short duration operation). The load on the generator will be designed to remain below 0.8 MW. Specification sheets for each manufacturer and evidence of the steady state continuous ratings are provided in Appendix A.

Each individual generator will be provided with its own package system. Within that package, the prime mover and alternator will be automatically turned on and off by a utility-generator PLC transfer controller located in the 480-volt main switchboard located within the LDC. Each generator will be controlled by a separate, independent transfer controller. The generator will be turned on if the electrical utility power becomes unavailable and will be turned off after utility power has been restored and the transfer controller has returned the utility to the active source of power serving the computer and mechanical loads within the LDC.

The generator package will integrate a dedicated fuel tank with a capacity of 6,400 gallons. The generators will be placed on a concrete slab. The generators are approximately 13 feet wide, 48.25 feet long and 20.5 feet high. Each generator will have a stack height of approximately 70 feet. When placed on slab, they will be spaced approximately seven feet apart horizontally. The generator yard will be enclosed with 22 feet high precast concrete screen walls on the south and east ends.

2.2.6 Fuel System

The backup generators will use ultra-low sulfur diesel as fuel (<15 parts per million sulfur by weight).

Each of the 44 generator units serving the data center area will have a 6,400-gallon diesel fuel storage tank with high fuel level at 5,120 gallons. 4,872 gallons are required for 24-hour operation.

The 1.0 MW PBB generator would include a 3,000-gallon diesel fuel storage tank, with high fuel level at 2,400 gallons. 1,728 gallons are required for 24-hour operation.

The 44 x 3.0 MW generators and 1 x 1.0 MW generator would have a combined diesel fuel storage capacity of 284,600 gallons, with fuel tanks filled to high fuel level, total fuel to be onsite estimated at 227,680 gallons to provide 24 hours of emergency generation at full demand of the LDC.

2.2.7 Cooling System

Each generator will be air cooled independently as part of its integrated package and therefore there is no common cooling system for the LBGF.

2.2.8 Water Supply and Use

The LBGF will not require any consumption of water.

2.2.9 Waste Management

The LBGF will not create any waste materials other than minor amounts of solid waste created during construction and maintenance activities.

2.2.10 Hazardous Materials Management

The LBGF will prepare a Spill Prevention, Control and Countermeasure Plan (SPCC) to address the storage, use and delivery of diesel fuel for the generators.

Each generator unit and its integrated fuel tanks have been designed with double walls. The interstitial space between the walls of each tanks is continuously monitored electronically for the existence of liquids. This monitoring system is electronically linked to an alarm system in the engineering office that alerts personnel if a leak is detected. Additionally, the standby generator units are housed within a self-sheltering enclosure that prevents the intrusion of storm water.

Diesel fuel will be delivered on an as-needed basis in a compartmentalized tanker truck with maximum capacity of 8,500 gallons. The tanker truck parks on the access road to the south of the generator yard and extends the fuel fill hose through one of multiple hinged openings in the precast screen wall surrounding the generator equipment yard.

There are no loading/unloading racks or containment for re-fueling events; however, a spill catch basin is located at each fill port for the generators. To prevent a release from entering the storm drain system, storm drains will be temporarily blocked off by the truck driver and/or facility staff during fueling events. Rubber pads or similar devices will be kept in the generation yard to allow quick blockage of the storm sewer drains during fueling events.

To further minimize the potential for diesel fuel to come into contact with stormwater, to the extent feasible, fueling operations will be scheduled at times when storm events are improbable.

Warning signs and/or wheel chocks will be used in the loading and/or unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed transfer lines. An emergency pump shut-off will be utilized if a pump hose breaks while fueling the tanks. Tanker truck loading and unloading procedures will be posted at the loading and unloading areas.

2.2.11 LBGF Project Construction

Construction activities for the LDC are expected to begin in November 2020 and are discussed in more detail in Section 2.3.4. Since the site preparation activities for the LDC will include the ground preparation and grading of the entire LDC site, the only construction activities for the LBGF would involve construction the generation yard. This will include construction of concrete slabs, fencing, installation of underground and above ground conduit and electrical cabling to interconnect to the LDC Building switchgear, construction of the racking system to support the second level of generators, and placement and securing the generators.

The generators themselves will be assembled offsite and delivered to site by truck. Each generator will be placed within the generation yard by a crane.

Construction of the generation yard and placement of the generators is expected to take six months and is included in the overall construction schedule for the LDC described in section 2.3.4. Construction personnel for the LBGF are estimated to range from ten to 15 workers including one crane operator.

2.2.12 LBGF Facility Operation

The backup generators will be run for short periods for testing and maintenance purposes and otherwise will not operate unless there is a disturbance or interruption of the utility supply. BAAQMD's Authority to Construct and the California Air Resources Board's Airborne Toxic Control Measures (ATCM) limits each engine to no more than 50 hours annually for reliability purposes (i.e., testing and maintenance). Please see Section 4.3 for a complete description of the testing and maintenance frequencies and loading proposed for the LBGF.

2.3 LAFAYETTE DATA CENTER FACILITIES DESCRIPTION

2.3.1 Overview

As described in Section 1.2.2 and 1.3, the Commission SPPE's determination is limited to solely to the LBGF. However, in order for the Commission to inform the decision-makers of the potential environmental effects of the LBGF, in combination with the LDC, the applicant has included a complete description of the LDC.

There are currently two legal parcels within the project site, the northern 13.04-acre parcel located at 2825 and 2845 Lafayette Street and the southern 9.72-acre parcel located at 2805 Lafayette Street. A lot line adjustment is proposed for this project to create an expanded 15.45-acre parcel at 2825 Lafayette Street and a smaller 7.31-acre parcel at 2805 Lafayette Street.

The existing 13.04-acre site, located at 2825 and 2845 Lafayette Street, is currently developed with two two-story office buildings and associated paved parking and loading areas. The two buildings are 164,000 square feet and 162,400 square feet respectively.

The LDC will include demolition of the existing improvements on the 13.04-acre site to construct a three-story 576,120 square foot data center building, utility substation, generator equipment yard (the LBGF), surface parking and landscaping. The data center building will house computer servers for private clients in a secure and environmentally controlled structure and would be designed to provide 66 megawatts (MW) of power to information technology (Critical IT) equipment. A site plan of the proposed development is shown on Figure 2.3-1.

The data center building will consist of two main components: a three-level power base building (PBB) component and a three-level data center suite component. The PBB will be located on the Lafayette Street side of the building and on Central Expressway side of the building towards the east side of the site. The PBB components will include support facilities such as the building lobby, restrooms, conference rooms, landlord office space, customer office space, loading dock and storage.

The data center suite components will consist of three levels of data center space. Level 1 and Level 2 will contain four data center suites and corresponding electrical/UPS rooms. Level 3 will contain three data center suites and corresponding electrical/UPS rooms. A portion of the building along the east side of the site will be reduce to a two-story building due to its proximity to the north end of the Norman Y. Mineta San José International Airport runway.

The elevation of the PBB roof would correspond with the elevation of the floor slab of the third data hall level. The project would also construct a new 100 MVA (mega volt-ampere) electrical substation along Lafayette Street (the western side of the site). SVP will have direct access to the site from Lafayette Street. The three-bay substation (three 50 MVA 60 kV-12kV step-down transformers) will be designed to allow one of the three transformers to be taken out of service, effectively providing 100 MVA of total power (a 3-to-make-2 design)[8].

[8] The relationship between MVA and MW is MVA = MW x power factor. A typical factor for a data center is around 0.95. Power factor is a function of the loads, not the utility substation. At 0.95 power factor, a 100 MVA substation can provide 95 MW of power. Therefore, the SVP utility substation will limit the LDC to below 100 MW of total load.

Transformers have an all-weather asphalt surface underlain by an aggregate base. A concrete masonry unit screen wall, 13 feet in height, would surround the substation. The substation will be capable of delivering electricity to the LDC from Silicon Valley Power but will not allow any electricity generated from the LBGF to be delivered to the transmission grid.

2.3.2 Building Heights and Setbacks

The data center building will be approximately 65 feet in height to the top of parapet to top of the Level 1 slab plus an addition seven feet in elevation change to the top of the Fire Department access road.

The mechanical equipment screen on the roof the building will extend to a height of 73 feet in height from the top of the Level 1 slab plus an addition seven feet in elevation change to the top of the Fire Department access road.

The building would also include an elevator penthouse that will extend to a height of 82 feet in height from the top of the Level 1 slab plus an addition seven feet in elevation change to the top of the Fire Department access road.

The building will be located in the center of the site and will be set back at a minimum of 15 feet from the front yard to the west (Lafayette Street), a minimum of 15 feet from side yard to the north (Central Expressway), a minimum of 0 feet from the side yard to the south (adjacent to a non-residential zone) and a minimum of 50 feet from the rear yard to the east (adjacent to a non-residential zone; railroad tracks).

2.3.3 Site Access and Parking

The overall project site has two driveways on Lafayette Street, one that serves the existing 2805 building and one that serves the existing 2825 and 2845 Lafayette Street. No changes are proposed to the location of the existing driveways.

A new driveway will be constructed on Lafayette between the two existing driveways to provide access to the new SVP utility substation.

The project would provide 77 parking spaces for the 2805 building and would provide 190 spaces for the 2825 building. Parking is spaced throughout the project site with a heavy concentration of parking at the northwest and southeast corners of the property.

2.3.4 Site Grading, Excavation, and Construction

The existing building at 2805 Lafayette Street would remain, while the existing improvements on the 2825 and 2845 Lafayette Street site would be demolished to allow for construction of the new LDC building.

Demolition and construction activities are estimated to last approximately 24 months to the initial occupancy of the building. Construction activities are estimated to last an additional 60 months indoors to bring the building to full occupancy.

Roughly 4,000 cubic yards of soil and undocumented fill would be removed from the site to be replaced by 34,000 cubic yards of fill to be imported to the site.

2.3.5 Landscaping

The LDC proposes to remove 375 (mostly parking lot) trees on-site, due to transmission line clearance requirements mandated by Silicon Valley Power (SVP), and various conflicts with proposed civil and architectural improvements. The City of Santa Clara's landscape ordinance mandates a 2:1 replacement with 24-inch box size trees, or 1:1 replacement with 36-in box size trees. The LDC proposes to mitigate for the loss of all 375 trees through a combination of 24-inch box size and 36-inch box size.

New landscaping consisting of trees, large and medium shrubs, and groundcovers will be installed along the property boundaries, building perimeters, stormwater treatment facilities, and landscape beds distributed throughout the parking facilities. Trees would be planted five feet away from new or existing water mains or utility lines.

A site plan of the proposed landscaping is shown in Figure 2.3-2.

2.3.6 Stormwater Controls

The LDC proposes to construct stormwater treatment areas consisting of bioretention areas and at-grade flow-through planter boxes totaling approximately 25,000 square feet. The stormwater treatment areas would be located around the perimeter of the site and adjacent to paved parking areas.

In the existing condition, stormwater discharges the site into the public system at three locations; the southwest corner of the 2805 Lafayette Street property, the northwest corner of the 2825 Lafayette Street property and the northeast corner of the 2825 property. The proposed project will connect to these three existing outfall points and is not proposing any new connections to the public storm drain system.

The San Francisco Bay Regional Water Quality Control Board (RWQCB) has issued a Municipal Regional Stormwater NPDES Permit (MRP) to regulate stormwater discharges from municipalities and local agencies. Under Provision C.3 of the MRP, new and redevelopment projects that create or replace 10,000 square feet or more of impervious surface area are required to implement site design, source control, and Low Impact Development (LID)-based stormwater treatment controls to treat post-construction stormwater runoff. LID-based treatment controls are intended to maintain or restore the site's natural hydrologic functions, maximizing opportunities for infiltration and evapotranspiration, and using stormwater as a resource (e.g. rainwater harvesting for non-potable uses). Examples of C.3 LID measures include bioretention areas, flow-through planters, and subsurface infiltration systems.

Downspouts for the roof drainage will discharge directly into bioretention areas or flow-through planters located adjacent to the building. In some cases, roof drainage will be piped under sidewalks

and discharged to the pavement surface where stormwater will then surface flow to at-grade bioretention planters located along the perimeter of the site.

Flow-through planters and bioretention planters will include perforated underdrains and overflow structures that connect to the on-site storm drains system which eventually discharges to the public storm system in Lafayette Street and Central Expressway.

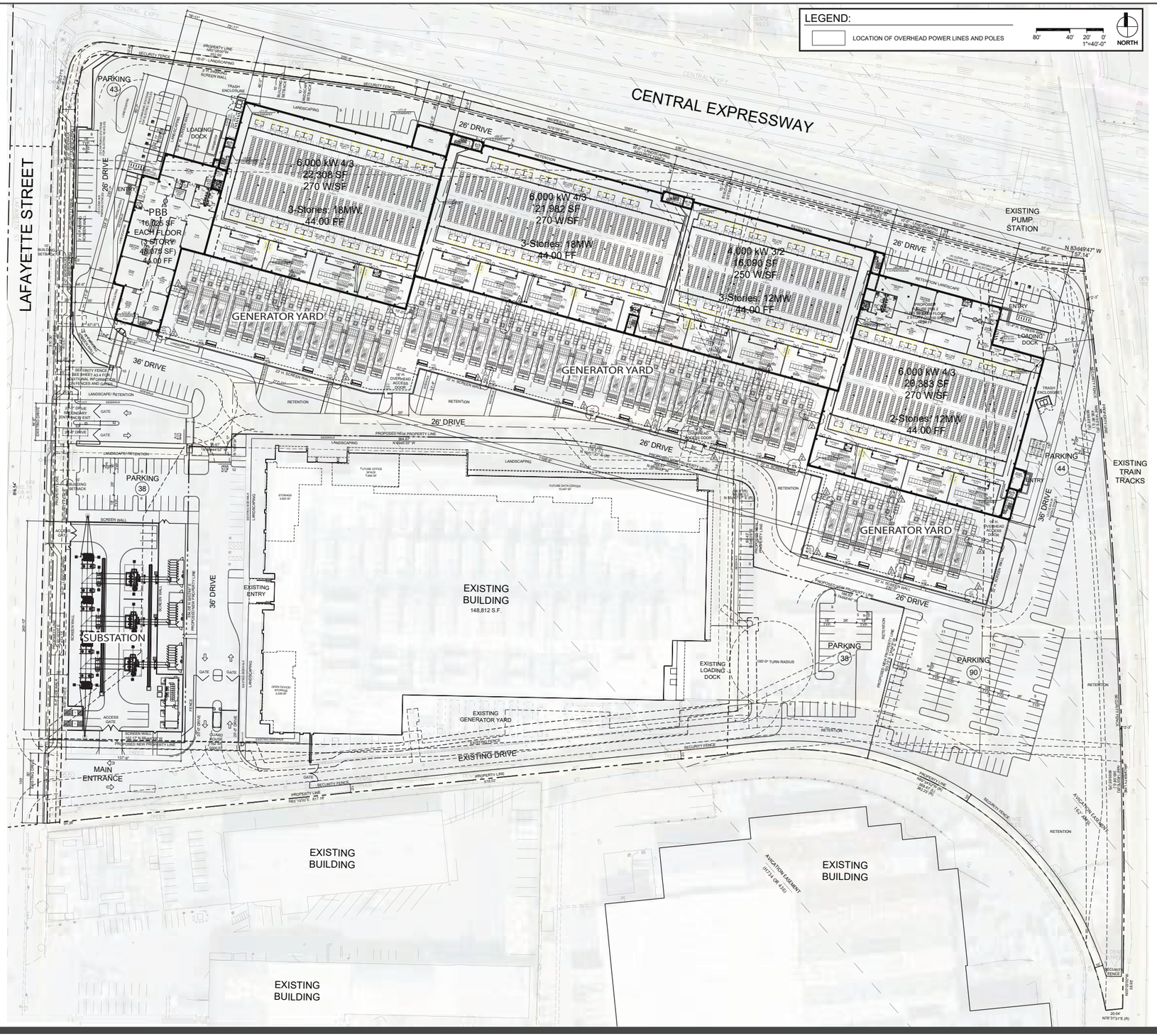
2.3.7 Facilities Utilities

As part of the construction of the new building, domestic water, fire water, sanitary sewer, fiber, and natural gas connections will be made from the City infrastructure systems located along Lafayette Street and Central Expressway as shown on Figure 2.3-1.

2.3.8 SVP Electrical Distribution Facilities

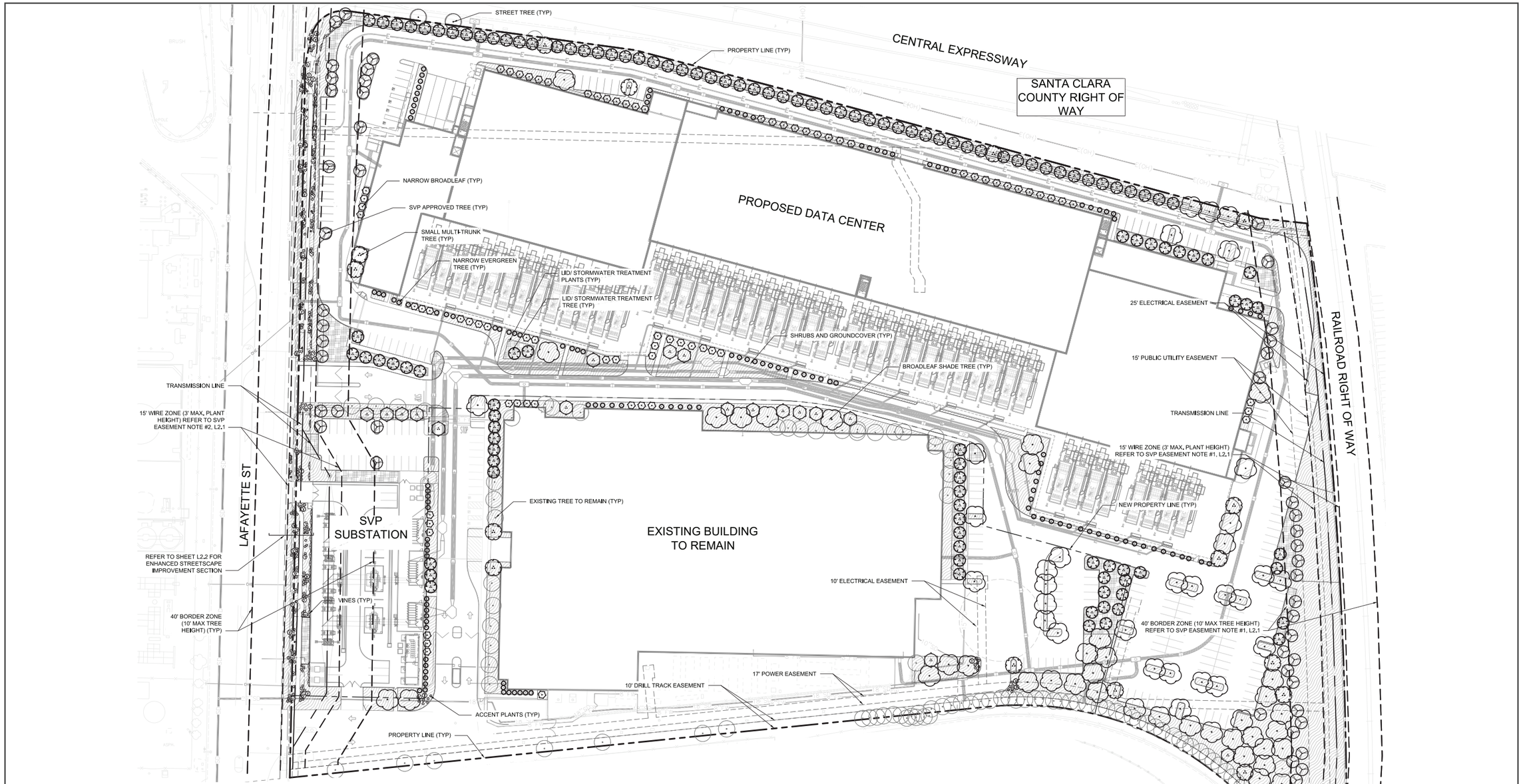
SVP will construct a new distribution substation to support the LDC. The substation will be ultimately owned and operated by SVP as part of its distribution network. The proposed new substation will be interposed on SVP's South Loop between the 115kV receiving station and an adjacent 60kV substation. The South Loop terminal ends are comprised of 115kV receiving stations (#1 and #2) which are connected to the greater SVP Bulk Electric System (BES). Each 115kV receiving station steps the voltage down to SVP's service territory transmission voltage of 60kV. Reliability is maintained such that, if there is a fault along any section of the Loop, electric service is still supplied from the receiving stations from either end.

The new conductor that interconnects the new substation to the BES will be an ACCR type, size 715 double bundle with a carrying capacity of 310 MVA. SVP's general practice is to use tubular steel transmission poles for the two dead end structures. While SVP has not yet designed the 60 kV transmission lines that interconnect the new substation, SVP has estimated that one transmission line will come in to the site from the north and one from the south, both routes paralleling the future Lafayette Street lines. There may be up to two new transmission poles.



STIE PLAN

FIGURE 2.3-1



PRELIMINARY LANDSCAPE SCHEDULE

TREES	QTY	DESCRIPTION
	99	EXISTING TREE TO REMAIN
	2	STREET TREE
	116	LID/STORMWATER TREATMENT TREE
	71	BROADLEAF SHADE TREE

TREES	QTY	DESCRIPTION
	58	SVP APPROVED TREE
	135	NARROW EVERGREEN TREE
	36	SMALL MULTI-TRUNK TREE
	74	NARROW BROADLEAF TREE

GROUNDCOVER	QTY	DESCRIPTION
		SHRUBS AND GROUNDCOVER
		LID/STORMWATER TREATMENT PLANTS
		ACCENT PLANTS
		VINES
		LANDSCAPE BOULDERS

TREE MITIGATION / REPLACEMENT	
TREES REMOVED	375
24" BOX SIZED TREES REQUIRED OR 36" BOX SIZED TREES REQUIRED	750 OR 375
NEW 24" BOX SIZED TREES (REPLACES 103 TREES)	207
NEW 36" BOX SIZED TREES (REPLACES 282)	282
SURPLUS OF ADDITIONAL NEW TREES	10

LANDSCAPE PLAN | FIGURE 2.3-2

2.4 MITIGATION INCORPORATED INTO PROJECT DESIGN

2.4.1 Air Quality

PD AQ-1: To ensure that fugitive dust impacts are less than significant, the project will implement the BAAQMD's recommended BMPs during the construction phase. These BMPs are incorporated into the design of the project and will include:

- All exposed surfaces (soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day.
- All haul trucks transporting material offsite shall be covered.
- All track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day.
- All vehicle speeds on unpaved surfaces shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks shall be paved as soon as possible. Building pads shall be completed as soon as possible after grading unless seeding or soil binders are used.
- Equipment idling times shall be minimized to 5 minutes per the Air Toxics Control Measure (ATCM). Idling time signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Information on who to contact, contact phone number, and how to initiate complaints about fugitive dust problems will be posted at the site.

2.4.2 Biological Resources

PD BIO-1: The project will incorporate the following measures to reduce impacts to nesting birds.

- If removal of the trees on-site would take place between January and September, a pre-construction survey for nesting raptors shall be conducted by a qualified ornithologist to identify active nesting raptor nests that may be disturbed during project implementation. Between January and April (inclusive) pre-construction surveys shall be conducted no more than 14 days prior to the initiation of construction activities or tree relocation or removal. Between May and August (inclusive), pre-construction surveys shall be conducted no more than 30 days prior to the initiation of these activities. The surveying ornithologist shall inspect all trees in and immediately adjacent to the construction area to be disturbed by these activities, and the ornithologist shall, in consultation with the State of California, Department of Fish and Wildlife (CDFW), designate a construction-free buffer zone (typically 250 feet) around the nest until the end of the nesting activity.

- The applicant shall submit a report indicating the results of the survey and any designated buffer zones to the satisfaction of the Director of Planning and Inspection prior to the issuance of a tree removal permit by the City Arborist.

2.4.3 Cultural Resources

PD CUL-1: The project proposes to implement the following measures to ensure the project's impacts to archaeological resources are less than significant:

- A Secretary of the Interior-qualified archaeologist and a Native American cultural resources monitor shall be on site to monitor grading of native soil once all pavement is removed from the project site. The project applicant shall submit the name and qualifications of the selected archaeologist and Native American Monitor to the Director of Planning and Inspection prior to the issuance of a grading permit. Preference in selecting Native American monitors shall be given to Native Americans with:

    - Traditional ties to the area being monitored.
    - Knowledge of local historic and prehistoric Native American village sites.
    - Knowledge and understanding of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.
    - Ability to effectively communicate the requirements of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.
    - Ability to work with law enforcement officials and the Native American Heritage Commission to ensure the return of all associated grave goods taken from a Native American grave during excavation.
    - Ability to travel to project sites within traditional tribal territory.
    - Knowledge and understanding of Title 14, California Code of Regulations, Section 15064.5.
    - Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding CEQA mitigation provisions.
    - Ability to read a topographical map and be able to locate site and reburial locations for future inclusions in the Native American Heritage Commission's Sacred Lands Inventory.
    - Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.

- After removal of pavement and prior to grading, the archaeologist shall conduct a pedestrian survey over the exposed soils to determine if any surface archaeological manifestations are present. The archaeologist will monitor full-time all grading and ground disturbing activities in native soils associated with construction of the proposed project. If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent, then a letter report detailing the rationale for making such a reduction and summarizing the monitoring results shall be provided to the Director of Planning and Inspection. Department of Recreation 523 forms shall be submitted along with the report for any cultural resources encountered over 50 years old.

- In the event that prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the Director of Planning and Inspection shall be notified, and a Secretary of the Interior-qualified archaeologist shall examine the find and record the site, including field notes, measurements, and photography for a Department of Parks and Recreation 523 Primary Record form. The

archaeologist shall make a recommendation regarding eligibility for the California Register of Historical Resources, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Director of Planning and Inspection has concurred with the recommendations. Within 30 days of the completion of construction or cultural resources monitoring, whichever comes first, a report of findings documenting any cultural resource finds, recommendations, data recovery efforts, and other pertinent information gleaned during cultural resources monitoring shall then be submitted to the Director of Planning and Inspection. Once finalized, this report shall be submitted to the Northwest Information Center at Sonoma State University.

- Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program training to all existing and any new employees. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed; and instructions to halt work in the vicinity of any potential cultural resources discovery, and notify the city-approved archaeologist and Native American cultural resources monitor.

PD CUL-2: The project proposes to implement the following measure to ensure the project's impacts to human remains are less than significant:

- In the event that human remains are discovered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified 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. All actions taken under this mitigation measure shall comply with Health and Human Safety Code § 7050.5(b).

2.4.4 Geology and Soils

PD GEO-1: In order to ensure the project design conforms to the requirements of a final geotechnical engineering investigation and California and local building standards and codes, the following is proposed as mitigation incorporated into the project. Incorporation will ensure seismic hazards are reduced to less than significant levels.

- To avoid or minimize potential damage from seismic shaking, the project would be built using standard engineering and seismic safety design techniques. Building redevelopment design and construction at the site shall be completed in conformance with the recommendations of a design-level geotechnical investigation, which will be included in a report to the City. The report shall be reviewed and approved by the City of Santa Clara's Building Division as part of the building permit review and issuance process. The building shall meet the requirements of applicable Building and Fire Codes, including the 2016 California Building Code, as adopted or updated by the City. The project shall be designed to withstand potential geologic hazards identified on the site and the project shall be designed to reduce the risk to life or property to the extent feasible and in compliance with the Building Code.

PD GEO-2: The project proposes to implement the following measures to as best management practices to ensure impacts to paleontological resources are less than significant.

- Prior to the start of any subsurface excavations that would extend beyond previously disturbed soils, all construction forepersons and field supervisors shall receive training by a qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology, who is experienced in teaching non- specialists, to ensure they can recognize fossil materials and shall follow proper notification procedures in the event any are uncovered during construction. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who shall evaluate its significance.

- If a fossil is found and determined by the qualified paleontologist to be significant and avoidance is not feasible, the paleontologist shall notify the Director of Planning and Inspection and develop and implement an excavation and salvage plan in accordance with Society of Vertebrate Paleontology standards. Construction work in these areas shall be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall then be deposited in a scientific institution with paleontological collections. A final Paleontological Mitigation Plan Report shall be prepared that outlines the results of the mitigation program. The Director of Planning and Inspection shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

2.4.5 Hazards

PD HAZ-1: The project will implement the following measures to would reduce potentially significant soil and or groundwater impacts to construction workers to a less than significant level.

- Prior to the issuance of grading permits, shallow soil samples shall be taken in areas where soil disturbance is anticipated to determine if contaminated soils with concentrations above established construction/trench worker thresholds may be present due to historical agricultural use and from historical leaks and spills. The soil sampling plan must be reviewed and approved by the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division prior to initiation of work. Once the soil sampling analysis is complete, a report of the findings will be provided to the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division and other applicable City staff for review.

- Documentation of the results of the soil sampling shall be submitted to and reviewed by the City of Santa Clara Director of Planning and Inspection prior to the issuance of a grading permit. Any soil with concentrations above applicable Environmental Screening Levels or hazardous waste limits would be characterized, removed, and disposed of off-site at an appropriate landfill according to all state and federal requirements.

- A Site Management Plan (SMP) will be prepared to establish management practices for handling impacted groundwater and/or soil material that may be encountered during site development and soil-disturbing activities. Components of the SMP will include: 1) a detailed discussion of the site background; 2) a summary of the analytical results; 3) preparation of a Health and Safety Plan by an industrial hygienist; 4) protocols for conducting earthwork activities in areas where impacted soil and/or groundwater are present or suspected; 5) worker training requirements, health and safety measures and soil handing procedures shall be described; 6) protocols shall be prepared to characterize/profile soil suspected of being contaminated so that appropriate mitigation, disposal or reuse alternatives, if necessary, can be implemented; 7) notification procedures if previously undiscovered significantly impacted soil or groundwater is encountered during construction; 8) notification procedures if previously unidentified hazardous materials, hazardous waste, underground storage tanks are encountered during construction; 9) on-site soil reuse guidelines; 9) sampling and laboratory analyses of excess soil requiring disposal at an appropriate off-site waste disposal facility; 10) soil stockpiling protocols; and 11) protocols to manage groundwater that may be encountered during trenching and/or subsurface excavation activities. Prior to issuance of grading permits, a copy of the SMP must be approved by the Santa Clara County Environmental Health Department, and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division.

- If contaminated soils are found in concentrations above risk-based thresholds pursuant to the terms of the SMP, remedial actions and/or mitigation measures will be taken to reduce concentrations of contaminants to levels deemed appropriate by the selected regulatory oversight agency for ongoing site uses. Any contaminated soils found in concentrations above thresholds to be determined in coordination with regulatory agencies shall be either 1) managed or treated in place, if deemed appropriate by the oversight agency or 2) removed and disposed of at an appropriate disposal facility according to California Hazardous Waste Regulations and applicable local, state, and federal laws.

2.4.6 Hydrology and Water Quality

PD HYD-1: The LDC will incorporate the following into the design and these measures should be treated as mitigation incorporated into the project. The following will reduce construction-related water quality impacts:

- 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 shall be suspended during periods of high winds.

- All exposed or disturbed soil surfaces shall be watered at least twice daily to control dust as necessary.

- Stockpiles of soil or other materials that can be blown by the wind shall be watered or covered.

- All trucks hauling soil, sand, and other loose materials shall be required to cover all trucks or maintain at least two feet of freeboard.
- All paved access roads, parking areas, and staging areas adjacent to the construction sites shall be swept daily (with water sweepers).
- Vegetation in disturbed areas shall be replanted as quickly as possible.
- All unpaved entrances to the site shall be filled with rock to knock mud from truck tires prior to entering City streets. A tire wash system may also be employed at the request of the City.

SECTION 3.0 PROJECT INFORMATION

3.1 PROJECT TITLE

Lafayette Backup Generating Facility and Lafayette Data Center

3.2 LEAD AGENCY CONTACT

Leonidas (Lon) Payne
Project Manager
Siting, Transmission and Environmental Protection (STEP) Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814
Phone: 916-651-0966
E-mail: Leonidas.Payne@energy.ca.gov

3.3 PROJECT APPLICANT

Digital Realty
4 Embarcadero Center, Suite 3200
San Francisco, CA 94111

3.4 PROJECT LOCATION

2805, 2825, and 2845 Lafayette Drive
Santa Clara, CA 95050

3.5 ASSESSOR'S PARCEL NUMBER

224-04-093

3.6 GENERAL PLAN DESIGNATION AND ZONING DISTRICT

General Plan Designation:	Heavy Industrial
Zoning District:	MH - Heavy Industrial

SECTION 4.0 ENVIRONMENTAL ANALYSIS

This section presents the discussion of impacts related to the following environmental subjects in their respective subsections:

4.1	Aesthetics	4.12	Mineral Resources
4.2	Agriculture and Forestry Resources	4.13	Noise
4.3	Air Quality	4.14	Population and Housing
4.4	Biological Resources	4.15	Public Services
4.5	Cultural and Tribal Cultural Resources	4.16	Recreation
4.6	Energy	4.17	Transportation
4.7	Geology and Soils	4.18	Utilities and Service Systems
4.8	Greenhouse Gas Emissions	4.19	Wildfire
4.9	Hazards and Hazardous Materials	4.20	Mandatory Findings of Significance
4.10	Hydrology and Water Quality	4.21	Environmental Justice
4.11	Land Use and Planning		

The discussion for each environmental subject includes the following subsections:

- **Environmental Setting** – This subsection 1) provides a brief overview of relevant plans, policies, and regulations that compose the regulatory framework for the project and 2) describes the existing, physical environmental conditions at the project site and in the surrounding area, as relevant.
- **Impact Discussion** – This subsection 1) includes the recommended checklist questions from Appendix G of the CEQA Guidelines to assess impacts and 2) discusses the project's impact on the environmental subject as related to the checklist questions.

4.1 AESTHETICS

4.1.1 Environmental Setting

4.1.1.1 *Existing Conditions on Site*

As discussed in Section 2.2.1 Existing Site Description, the 15.45-acre site is developed with two two-story office buildings, a data center building, paved surface parking and loading dock areas. The three existing buildings consist of a mix of architectural styles and materials, including corrugated metal siding, wood, and stucco. Non-native trees and ornamental landscaping are located along the Lafayette Street frontage of the property and throughout the site.

The site is within a fully developed area in Santa Clara with flat topography. Views of the eastern foothills from public viewpoints are partially blocked by existing industrial structures in the area. Views of the project site can be viewed in Photos 1 through 6.

4.1.1.2 *Surrounding Land Uses*

The project area consists primarily of industrial land uses. Buildings in the area are similar in height and scale to the existing buildings on the project site. An office park with buildings ranging from one to three stories is located across the Union Pacific Railroad (UPRR) tracks to the east. To the north, south and west of the project site, there are industrial and commercial uses.

The Norman Y. Mineta San José International Airport is located approximately 0.3 miles east of the site. Aircraft, along with truck and other vehicle traffic, are readily apparent in the area. Views of the surrounding land uses can be seen in Photos 7 and 8.

There are no scenic vistas within the City of Santa Clara. There are also no scenic resources on-site, and the site is not visible from a scenic highway.

Photo 1: View of the existing building (2805 Lafayette Street) to remain after project construction.

Photo 2: View of the parking lot and landscaping directly in front of 2805 Lafayette Street, facing north.

PHOTOS 1 & 2

Photo 3: View of the existing building (2845 Lafayette Street) to be demolished.

Photo 4: View of the loading dock connected to 2845 Lafayette Street.

PHOTOS 3 & 4

Photo 5: View of the existing building (2825 Lafayette Street) to be demolished.

Photo 6: View of the parking lot and landscaping directly in front of 2825 Lafayette Street.

PHOTOS 5 & 6

Photo 7: View of the surrounding uses across Lafayette Street, facing west.

Photo 8: View of surrounding uses at the intersection of Lafayette Street and Central Expressway, facing northeast.

PHOTOS 7 & 8

4.1.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
1) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
3) In non-urbanized areas, substantially degrade the existing visual character or quality of public views[9] of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact AES-1:	The project would not have a substantial adverse effect on a scenic vista. **(No Impact)**

There are no scenic vistas within the City of Santa Clara. The project, therefore, would not have a substantial adverse effect on a scenic vista. **(No Impact)**

Impact AES-2:	The project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. **(No Impact)**

The site is not visible from a scenic highway. The project, therefore, would not substantially damage scenic resources within a state scenic highway. **(No Impact)**

[9] Public views are those that are experienced from publicly accessible vantage points.

Impact AES-3:	The project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The project would not conflict with applicable zoning and other regulations governing scenic quality. **(Less than Significant Impact)**

Aesthetic values are subjective. Opinions as to what constitutes a degradation of visual character differs among individuals. One of the best methods for assessing what constitutes a visually acceptable standard for new buildings are the City's design standards and implementation of those standards through the City's design process. The following discussion addresses the proposed changes to the visual setting of the project area and factors that are part of the community's assessment of the aesthetic values of a project's design.

The proposed project would demolish two of the existing buildings on-site and construct a two- and three-story 576,120 square foot data center (LDC) along with associated substation, 108,602 square foot generator equipment yard (LBGF), paved parking areas, and landscaping.

The LDC building would be approximately 65 feet in height to the top of the Level 1 slab plus an additional seven-foot change in elevation to the top of the fire department access road. The mechanical equipment screen on the roof of the building would extend to a height of 73 feet from the top of the Level 1 slab, plus an additional seven foot elevation change to the top of the Fire Department access road.

The building would be located in the center of the north parcel of the site and would be set back at a minimum of 15 feet from the front yard to the west (Lafayette Street), a minimum of 15 feet from side yard to the north (Central Expressway), a minimum of zero feet from the side yard to the south (adjacent to a non-residential zone) and a minimum of 50 feet from the rear yard to the east, adjacent to a non-residential zone. The LBGF would be located directly adjacent to the southern side of the LDC and would be enclosed with 22 feet high precast concrete walls on the south and east ends.

Landscaping consisting of trees, shrubs, and groundcover would be planted throughout the site, including along the building's perimeter and property boundaries. The project would remove existing vegetation throughout the parking lot and construct a building of greater mass than the existing buildings. While the existing data center building, which is separate from the proposed project, would remain unchanged, the two two-story buildings would be replaced with a larger, three- and four-story structure. Though the LDC building would be larger in mass and scale than the existing buildings, it would be similar in scale to nearby development. The exterior of the building and the proposed screening fences would be subject to the City's design review process and would conform to current community design guidelines and landscaping standards for the Heavy Industrial (MH) zoning district. The guidelines were developed to support community aesthetic values, preserve neighborhood character, and promote a sense of community and place throughout the City.

For the reasons described above, the project would not degrade the existing visual character or quality of the site and its surroundings, nor would it conflict with applicable zoning and other regulations governing scenic quality. **(Less than Significant Impact)**

Impact AES-4:	The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. **(Less than Significant Impact)**

The project would include pole mounted site light fixtures along the site perimeter, as well as along the perimeter of the LBGF utility yard, and outdoor security lighting along the LDC building and driveway entrances. The outside lighting would comply with the City's lighting requirements (City Code Section 18.48.140) and would be comparable in brightness to the ambient lighting in the surrounding area. Additionally, outdoor lighting would be angled downward and would include light visors and light hoods. The exterior surfaces of the LDC building would consist primarily of precast concrete and would not be a significant source of glare during daytime hours.

Building materials and lighting plans would be reviewed by the City's Architectural Committee and the Planning Division staff prior to issuance of building permits to ensure that the project would not create a substantial new source of light or glare. The project, therefore, would not create a new source of substantial light or glare, nor would it adversely affect day or nighttime views in the area. **(Less than Significant Impact)**

4.2 AGRICULTURAL AND FORESTRY RESOURCES

4.2.1 Environmental Setting

According to the Santa Clara County Important Farmland 2016 Map, the project site is designated as *Urban and Built-Up Land. Urban and Built-Up Land* is defined as land with a density of at least six structures per 10-acre parcel. *Urban and Built-Up Land* is commonly used for residential, industrial and commercial purposes, golf courses, landfills, airports, sewage treatment, and water control structures.[10] According to the Santa Clara County Office of the Assessor, the site is not subject to a Williamson Act contract.

4.2.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
4) Result in a loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
5) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

[10] California Department of Conservation, *Santa Clara County Important Farmland Map 2016.* Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/scl16.pdf

Impact AG-1:	The project would not 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 use. **(No Impact)**

According to the Santa Clara County Important Farmland 2016 Map, the project site is designated as *Urban and Built-Up Land.* The project, therefore, would not convert farmland to non-agricultural use. **(No Impact)**

Impact AG-2:	The project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. **(No Impact)**

The site is zoned *MH – Heavy Industrial*. According to Santa Clara County Office of the Assessor, the site is not subject to a Williamson Act contract. The project, therefore, would not conflict with existing zoning for agricultural use, or a Williamson Act contract. **(No Impact)**

Impact AG-3:	The project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. **(No Impact)**

The site is zoned *MH – Heavy Industrial.* The project, therefore, would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. **(No Impact)**

Impact AG-4:	The project would not result in a loss of forest land or conversion of forest land to non-forest use. **(No Impact)**

No forestland is located on or near the site. The project, therefore, would not result in a loss of forest land or conversion of forest land to non-forest use. **(No Impact)**

Impact AG-5:	The project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. **(No Impact)**

As described above, no farmland or forest land is located on or near the site. The project, therefore, would not involve other changes in the existing environment which could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use. **(No Impact)**

4.3 AIR QUALITY

This section presents the evaluation of emissions and impacts resulting from the construction and operation of Lafayette Backup Generating Facility (LBGF) which supports the Lafayette Data Center (LDC), as well as the proposed mitigation measures to be used to minimize emissions and limit impacts to below established significance thresholds. This section is based upon an analysis prepared by Atmospheric Dynamics, Inc. in accordance with the California Energy Commission (CEC) application requirements for a Small Power Plant Exemption (SPPE) pursuant to the power plant siting regulations, and the rules and regulations of the Bay Area Air Quality Management District (BAAQMD or District). This analysis is but one part of a larger analysis, which seeks an SPPE Decision from the CEC and an Authority to Construct from the BAAQMD.

The following Appendices contain support data for the Air Quality and Public Health analyses.

Appendix AQ 1 – Engine Emissions Data for Criteria and Toxic Pollutants
Appendix AQ 2 – Engine Specification Brochures and Certification Information
Appendix AQ 3 – Modeling Support Data
Appendix AQ 4 – CalEEMod file for Construction and Miscellaneous Operational Emissions
Appendix AQ 5 – Risk Assessment Support Data

4.3.1 Environmental Setting

Air quality in the San Francisco Bay Area Air Basin (SFBAAB) is typically better than most other areas of the state, due to its proximity to the Pacific Ocean and the weather patterns that dominate the region. The summer climate of the west coast and the Bay Area region is dominated by a semi-permanent high centered over the northeastern Pacific Ocean. Because this high-pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus, the conditions that persist along the coast of California during summer are a northwest air flow and negligible precipitation. A thermal low-pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the San Francisco Bay Area much of the summer.

The steady northwesterly flow around the eastern edge of the Pacific high-pressure cell exerts a stress on the ocean surface along the west coast. This induces upwelling of cold water from below. Upwelling produces a band of cold water that is approximately 80 miles wide off San Francisco.

Air approaching the California coast, already cool and moisture-laden from its long trajectory over the Pacific, is further cooled as it flows across this cold bank of water near the coast, thus accentuating the temperature contrast across the coastline. This cooling is often sufficient to produce a high incidence of fog and stratus clouds along the Northern California coast in summer.
In winter, the Pacific High weakens and shifts southward, upwelling ceases, and winter storms become frequent. Almost all of the Bay Area's annual precipitation takes place in the November through April period. During the winter rainy periods, inversions are weak or nonexistent, winds are often moderate and air pollution potential is very low. During winter periods when the Pacific high becomes dominant, inversions become strong and often are surface-based; winds are light and pollution potential is high. These periods are characterized by winds that flow out of the Central Valley into the Bay Area and often include Tule fog.

Air quality is determined by measuring ambient concentrations of criteria pollutants at various locations through a defined region. Degradation, or lack thereof, of air quality is determined by comparing past air concentrations to the current ambient air quality standards and establishing trends for the area in question. Toxic air contaminants (TACs) have no ambient air quality standards, and a health risk assessment (HRA) is typically conducted to evaluate whether risks of exposure to TACs will create an adverse impact.

4.3.1.1 *Existing Air Quality*

In 1970, the United States Congress instructed the United States Environmental Protection Agency (EPA) to establish standards for air pollutants, which were of nationwide concern. This directive resulted from the concern of the effects of air pollutants on the health and welfare of the public. The resulting Clean Air Act (CAA) set forth air quality standards to protect the health and welfare of the public. Two levels of standards were promulgated – primary standards and secondary standards. Primary national ambient air quality standards (NAAQS) are "those which, in the judgment of the administrator [of the EPA], based on air quality criteria and allowing an adequate margin of safety, are requisite to protect the public health (state of general health of community or population)." The secondary NAAQS are "those which in the judgment of the administrator [of the EPA], based on air quality criteria, are requisite to protect the public welfare and ecosystems associated with the presence of air pollutants in the ambient air." To date, NAAQS have been established for seven criteria pollutants as follows: sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sub 10-micron particulate matter (PM_{10}), sub 2.5-micron particulate matter ($PM_{2.5}$), and lead (Pb).

The criteria pollutants are those that have been demonstrated historically to be widespread and have a potential for adverse health impacts. US EPA developed comprehensive documents detailing the basis of, or criteria for, the standards that limit the ambient concentrations of these pollutants. The State of California has also established ambient air quality standards (AAQS) that further limit the allowable concentrations of certain criteria pollutants. Review of the established air quality standards are undertaken by both US EPA and the State of California on a periodic basis. As a result of the periodic reviews, the standards have been updated, i.e., amended, additions, and deletions, over the ensuing years to the present.

Each federal or state ambient air quality standard is comprised of two basic elements: (1) a numerical limit expressed as an allowable concentration, and (2) an averaging time which specifies the period over which the concentration value is to be measured. Table 4.3-1 presents the current federal and state ambient quality standards.

Table 4.3-1: California and National Ambient Air Quality Standards			
Pollutant	**Averaging Time**	**California Standards Concentration**	**National Standards Concentration**
Ozone	1 hour	0.09 ppm (180 µg/m^3)	-
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)
Carbon monoxide (CO)	8 hours	9.0 ppm (10,000 µg/m^3)	9 ppm (10,000 ug/m^3)
	1 hour	20 ppm (23,000 µg/m^3)	35 ppm (40,000 ug/m^3)
Nitrogen dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)
Sulfur dioxide (SO_2)	Annual Arithmetic Mean	-	0.030 ppm (80 µg/m^3)
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	3 hours	-	0.5 ppm (1300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)
Suspended particulate matter or PM_{10} (10 micron)	24 hours	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	-
Suspended particulate matter or $PM_{2.5}$ (2.5 micron)	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3 (3-year average)
	24 hours	-	35 µg/m^3
Sulfates	24 hours	25 µg/m^3	-
Lead (Pb)	30 days	1.5 µg/m^3	-
	Calendar Quarter	-	1.5 µg/m^3
	Rolling 3-month Average	-	0.15 µg/m^3
ppm = parts per million, ppb=parts per billion, µg/m^3 = micrograms per cubic meter (CARB 2016)			

Brief descriptions of health effects for the main criteria pollutants are as follows.

Ozone

Ozone is a reactive pollutant, which is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving precursor organic compounds (POC) and oxides of nitrogen (NO_x). POC and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because it is not emitted directly by sources but is formed downwind of sources of POC and NO_x under the influence of wind and sunlight. Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide

Carbon monoxide is a non-reactive pollutant that is a product of incomplete combustion. Ambient carbon monoxide concentrations generally follow the spatial and temporal distributions of vehicular traffic and are also influenced by meteorological factors such as wind speed and atmospheric mixing. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area out to some distance from vehicular sources. When inhaled at high concentrations, carbon monoxide combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses.

Particulate Matter (PM_{10} and $PM_{2.5}$)

PM_{10} consists of particulate matter that is ten microns or less in diameter (a micron is one-millionth of a meter), and fine particulate matter, $PM_{2.5}$, which consists of particulate matter 2.5 microns or less in diameter. Both PM_{10} and $PM_{2.5}$ represent fractions of particulate matter, which can be inhaled into the air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, combustion, and atmospheric photochemical reactions. Some of these operations, such as demolition and construction activities, contribute to increases in local PM_{10} and $PM_{2.5}$ concentrations, while others, such as stationary source emissions, vehicular traffic, etc. affect regional PM_{10} and $PM_{2.5}$ concentrations.

Nitrogen Dioxide and Sulfur Dioxide

Nitrogen dioxide (NO_2) and sulfur dioxide (SO_2) are two gaseous compounds within a larger group of compounds, NO_x and sulfur oxides (SO_x), respectively, which are products of the combustion of fuel. NO_x and SO_x emission sources can elevate local NO_2 and SO_2 concentrations, and both are regional precursor compounds to particulate matter. As described above, NO_x is also an ozone precursor compound and can affect regional visibility. (Nitrogen dioxide is the “whiskey brown” colored gas readily visible during periods of heavy air pollution.) Elevated concentrations of these compounds are associated with increased risk of acute and chronic respiratory disease. Additionally, sulfur dioxide and nitrogen oxides emissions can be oxidized in the atmosphere to eventually form sulfates and nitrates, which contribute to acid rain.

Lead

Gasoline-powered automobile engines used to be the major source of airborne lead in urban areas. Excessive exposure to lead concentrations can result in gastrointestinal disturbances, anemia, kidney disease, and in severe cases of neuromuscular and neurological dysfunction. The use of lead additives in motor vehicle fuel has been eliminated in California, and lead concentrations have declined substantially as a result.

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is a naturally occurring gas contained, as a for-instance, in geothermal steam from the Geysers. H_2S has a "rotten egg" odor at concentration levels as low as 0.005 parts per million (ppm). The state 1-hour standard of 0.03 ppm is set to reduce the potential for substantial odor complaints. At concentrations of approximately ten ppm, exposure to H_2S can lead to health effects such as eye irritation.

Toxic/Hazardous Air Contaminants

"Toxic air contaminants" (TACs) are air pollutants that are believed to have carcinogenic or adverse non-carcinogenic effects but do not have a corresponding ambient air quality standard. There are hundreds of different types of toxic air contaminants, with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes such as petroleum refining, electric utility and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust.

Toxic air contaminants are regulated under both state and federal laws. Federal laws use the term "Hazardous Air Pollutants" (HAPs) to refer to the same types of compounds referred to as TACs under state law. Both terms generally encompass the same compounds. For the sake of consistency, this analysis will use TACs when referring to these compounds rather than HAPs. Under the Clean Air Act Amendments of 1990, approximately 190 substances are designated as TACs. Appendix AQ1 presents the annual emissions of the TACs in Tables AQ1-1 and AQ1-2. Tables in the emissions section below present the emissions from the diesel engines at the LBGF facility. TAC emissions are well below the major source thresholds; therefore, the facility is not a major source subject to Maximum Achievable Control Technology (MACT).

Attainment Status

The EPA designates the attainment status of regional areas with respect to federal air quality standards, while the California Air Resources Board (CARB) designates the attainment status of regional areas of California with respect to state air quality standards. Local air districts in California play a vital role is such designations at both levels. These classifications depend on whether the monitored ambient air quality data shows compliance, or non-compliance with the ambient air quality standards, respectively. The LBGF and LDC site is located within Santa Clara County, under the jurisdiction of the BAAQMD. Table 4.3-2 summarizes the attainment status for each of the criteria pollutants in the BAAQMD with regards to both the federal and state standards.

Table 4.3-2: Attainment Status for the San Francisco Bay Area Air Basin			
Pollutant	**Averaging Time**	**Federal Designation**	**State Designation**
Ozone	1 Hour 8 Hour	Marginal Non Attainment Non Attainment	Non Attainment Non Attainment
CO	1 Hour 8 Hour	Maintenance Maintenance	Attainment Attainment
NO_2	1 Hour Annual AM	Attainment Attainment	Attainment Attainment
SO_2	1 Hour 3 Hour 24 Hour Annual AM	Attainment Attainment Attainment Attainment	Attainment Attainment - -
PM_{10}	24 Hour Annual AM	Attainment -	Non Attainment Non Attainment
$PM_{2.5}$	24 Hour Annual AM	Attainment Attainment	- Non Attainment
Lead	30 day Avg Calendar Qtr. Rolling 3 Month Avg	Attainment Attainment -	Attainment - -
Visibility Reducing PM (VRP)	8 Hour	-	Unclassified
Sulfates	24 Hour	-	Attainment
H2S	1 Hour	-	Unclassified
Vinyl Chloride	24 Hour	-	No info
Source: BAAQMD website, 2019. (BAAQMD, 2017a)			

The LBGF is not expected to emit lead, visibility reducing particulate (VRP), sulfates, hydrogen sulfide, or vinyl chloride. Therefore, these pollutants are not analyzed further in this report.

Existing Conditions

The existing air quality conditions in the project area are summarized in Table 4.3-3 and Table 4.3-4, which provide the background ambient air concentrations of criteria pollutants for the previous three years as measured at certified monitoring stations near the project site. To evaluate the potential for air quality degradation as a result of the project, modeled project air concentrations are combined with the respective background concentrations as presented in Table 4.3-4 and used for comparison to the NAAQS and CAAQS.

Table 4.3-3: Measured Ambient Air Quality Concentrations by Year						
Pollutant	**Units**	**AvgTime**	**Basis of Yearly/Design Concentrations**	**2016**	**2017**	**2018**
Ozone	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	87	121	78
Ozone	ppb	8-Hr	CAAQS-1st Highs/3-yr Max	66	98	61
Ozone	ppb	8-Hr	NAAQS-4th Highs/3-yr Avg	61	75	53
NO_2	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	51	68	86
NO_2	ppb	1-Hr	NAAQS-98thos/3-yr Avg	42	50	59
NO_2	ppb	Annual	CAAQS/NAAQS-AAM/3-yr Max	11	12	13
CO	ppm	1-Hr	CAAQS-1st Highs/3-yr Max	2.0	2.1	2.5
			NAAQS-2nd Highs/3-yr Max	1.9	2.0	2.4
CO	ppm	8-Hr	CAAQS-1st Highs/3-yr Max	1.4	1.8	2.1
			NAAQS-2nd Highs/3-yr Max	1.3	1.7	2.0
SO_2	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	1.8	3.6	6.9
			NAAQS-99thos/3-yr Avg	2	3	3
		24-Hr	CAAQS-1st Highs/3-yr Max	0.8	1.1	1.1
			NAAQS-2nd Highs/3-yr Max	0.8	1.0	1.1
		Annual	CAAQS/NAAQS-AAM/3-yr Max	0.19	0.20	0.21
PM_{10}	µg/m³	24-Hr	CAAQS-1st Highs/3-yr Max	41	70	122
			NAAQS-2nd Highs/3-yr 4th High	35	67	111
		Annual	CAAQS-AAM/3-yr Max	18.5	21.6	23.1
$PM_{2.5}$	µg/m³	24-Hr	NAAQS-98th%/3-yr Avg	19	34	73
		Annual	CAAQS –AAM/3-yr Max	8.4	9.5	12.8
			NAAQS-AAM/3-yr Avg			10.2

Notes: Values for 158 East Jackson Street, San Jose, CA, the nearest BAAQMD monitoring site (all applicable pollutants measured)
Data sources: BAAQMD website Air Pollution Summaries for CAAQS (10/22/19) and USEPA AIRS website for NAAQS (10/22/19) (CARB 2019) and (EPA 2019)

Table 4.3-4: Background Air Quality Data Summary	
Pollutant and Averaging Time	**Background Value (µg/m^3)**
Ozone – 1-hour Maximum CAAQS	238
Ozone – 8-hour Maximum CAAQS/ 3-year average 4th High NAAQS	192/124
PM_{10} – 24-hour Maximum CAAQS/ 24-hour 3-year 4th High NAAQS	122/98
PM_{10} – Annual Maximum CAAQS	23.1
$PM_{2.5}$ – 3-Year Average of Annual 24-hour 98th Percentiles NAAQS	42
$PM_{2.5}$ – Annual Maximum CAAQS/ 3-Year Average of Annual Values NAAQS	12.8/10.2
CO – 1-hour Maximum CAAQS/ 1-hour High, 2nd High NAAQS	2,863/2,748
CO – 8-hour Maximum CAAQS/ 8-hour High, 2nd High NAAQS	2,405/2,290
NO_2 – 1-hour Maximum CAAQS/ 3-Year Average of Annual 98th Percentile 1-hour Daily Maxima NAAQS	162/95
NO_2 – Annual Maximum CAAQS/NAAQS	24.5
SO_2 – 1-hour Maximum CAAQS/ 3-Year Average of Annual 99th Percentile 1-hour Daily Maxima NAAQS	18.1/7.1
SO_2 – 3-hour Maximum NAAQS (Not Available - Used 1-hour Maxima)	18.1
SO_2 – 24-hour Maximum CAAQS 24-hour High, 2nd High NAAQS	2.9/2.9
SO_2 – Annual Maximum NAAQS	0.5
Values for 158 East Jackson Street, San José, CA, the nearest BAAQMD monitoring site (all applicable pollutants measured) Conversion of ppm/ppb measurements to µg/m^3 concentrations based on: µg/m^3 = ppm x 40.9 x MW, where MW = 48, 28, 46, and 64 for ozone, CO, NO_2, and SO_2, respectively.	

4.3.1.2 *Regulatory Background*

Federal, state, and regional agencies regulate air quality within the BAAQMD, where the project site is located.

Federal

At the federal level, EPA is responsible for overseeing implementation of the federal Clean Air Act (CAA) and its subsequent amendments. As required by the federal CAA, NAAQS have been established for the criteria pollutants described above.

New Source Performance Standards

The LBGF will be subject to the applicable New Source Performance Standards (NSPS) standards that are identified below. A description of the applicant's compliance plan to meet each

standard is included.

40 CFR Part 60, Subpart IIII

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines became effective July 11, 2006. The diesel engines are subject to Subpart IIII. The proposed engines are EPA Tier 2 rated and will comply with these regulations.

Compression Ignition (CI) Diesel Engines Emission Standards

Based on 40 CFR 60.4202, emergency CI engines rated at > 560 kW are subject to the emissions standards in 40 CFR 89.112, Table 1, as follows:

- Tier 2 – NO_x+NMHC 6.4 g/kw-hr = 4.8 g/bhp-hr
- Tier 2 – CO 3.5 g/kw-hr = 2.6 g/bhp-hr
- Tier 2 – PM 0.20 g/kw-hr = 0.15 g/bhp-hr

Using the recommended CARB procedure for breaking out the NO_x+NMHC value, the applicable standard for NO_x would be 4.5 g/bhp-hr, and the applicable standard for NMHC (VOC) would be 0.3 g/bhp-hr.

The proposed diesel-fired engines will satisfy these requirements based upon data supplied by the manufacturer as certified by EPA. In addition, the proposed engines will utilize a diesel particulate filter which will reduce the PM emissions to less than or equal to 0.01 g/bhp-hr.

40 CFR Part 60 Subpart ZZZZ

The proposed CI engines are exempt from the requirements of Subpart ZZZZ (63.6590 (c)(1)) if the engines comply with the emissions limitations specified in 40 CFR 60 Subpart IIII. See discussion above.

State

CARB

CARB is the state agency that retains authority to regulate mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. The CARB also establishes and revises the California Ambient Air Quality Standards (CAAQS).

TACs are primarily regulated through state and local risk management programs, which are designed to eliminate, avoid, or minimize the risk of adverse health effects from exposures to TACs. In the BAAQMD, the two most prominent TAC regulatory programs are the Toxics New Source Review (Regulation 2, Rule 5) rules and the AB2588 Air Toxics Hot Spots Program.

Regional

BAAQMD Air Quality Standards and Regulations

The section briefly describes the regulations which would apply to the LBGF as set forth in the BAAQMD Rules and Regulations.

Regulation 2 Rule 2 – New Source Review (NSR)

This rule applies to all new or modified sources requiring a Permit to Operate for any new source with actual or potential emissions above the rule trigger limit. The rule also specifies when Best Available Control Technology (BACT) is required, when offsets are required and the offset ratios, as well the requirements for the required impact analyses, etc.

BACT Requirements

A review of BACT for CI-Stationary Emergency Standby engines rated at greater than 50 BHP (BAAQMD Document 96.1.3, Revision 7, 12/22/2010) indicates that BACT for the proposed engines would be as follows:

- PM 0.15 g/bhp-hr
- NMHC+NO_x 4.8 g/bhp-hr
- CO 2.6 g/bhp-hr
- SO_2 fuel sulfur content not to exceed 15 ppm

The engines proposed for the LBGF meet these requirements, so BACT is satisfied.

Additionally, the use of diesel particulate filters on both engines will reduce the PM emissions to less than or equal to 0.01 g/bhp-hr.

NSR Offset Requirements

Required emissions offsets as identified in this application will be obtained in compliance with the Regulation 2 Rule 2 NSR rule provisions in Section 302. These provisions are discussed as follows:

- Pursuant to the BAAQMD NSR Rule (Regulation 2 Rule 2), section 2-2-302, offsets must be provided for NO_x or POC (VOC is used in this application), for any source with potential emissions greater than ten tons per year (tpy). For sources which emit NOx or VOC in excess of ten tpy but less than 35 tpy, these offsets can be provided by either of the two methods outlined in subsections 302.1.1 or 302.1.2 as follows; (1) the APCO must provide the required offsets from the Small Facility Bank Account, or (2) if the Small Facility Bank Account is exhausted then it is the responsibility of the Applicant to provide the required offsets to mitigate the proposed emissions net increase. VOC emissions from the proposed facility are less than ten tpy, so VOC offsets are not required under the District NSR rule. NOx emissions are greater than 35 tpy, and as such, the applicant must secure NOx offsets at a ratio of 1.15:1 for any un-offset cumulative increase in emissions. The NOx offsets cannot be acquired from the Small Facility Offset Bank.

- Offset mitigation for PM_{10}, $PM_{2.5}$, and sulfur dioxide emissions is addressed in Section 2-2-303. This section specifies that offsets are only required if the source has the potential to emit any of these pollutants in excess of 100 tons per year. The modeling indicates that the worst case PM_{10}, $PM_{2.5}$, and SO2 emissions from the LBGF are 0.161, 0.161, and 0.05 tons per year respectively. For these reasons, mitigation for emissions at these low emissions levels is not warranted, and such mitigation is not required under Regulation 2 Rule 2.

Regulation 9 Rule 8 – NO_x and CO from Stationary Internal Combustion Engines

- Section 9-8-304 requires that emergency CI engines rated at greater than 175 bhp meet the following limits (at 15 percent O_2 dry basis): NO_x 110 ppm and CO 310 ppm. However, Section 9-8-110.5 exempts "emergency standby engines" from this requirement.
- Section 9-8-330 requires that the affected engine be limited to non-emergency operations of less than or equal to 50 hours per year.
- Section 9-8-530 requires that each engine be equipped with a non-resettable totalizing meter, and the following must be logged and reported to the BAAQMD:
    - Total hours run each year
    - Total hours of emergency operation per year
    - Specify the nature of each emergency operation

The proposed engine models will comply with the above requirements.

BAAQMD Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants

This rule provides for the review of new and modified sources of TAC emissions to evaluate potential public exposure and health risk. The rule also specifies when toxics-BACT is required, trigger limits for further analysis based on substance specific emissions levels (both short and long term), risk assessment procedures, etc.

BAAQMD Air Plans and Regulations

BAAQMD is the primary regional agency responsible for attaining and maintaining air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, and enforcement. Examples of the BAAQMD's primary air plans and regulations are described below.

BAAQMD Clean Air Plan

The 2017 Bay Area Clean Air Plan was adopted by the BAAQMD on April 19, 2017 and provides a regional strategy to protect public health and protect the climate. The 2017 Bay Area Clean Air Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan, and is a multi-pollutant air quality plan addressing four categories of air pollutants (BAAQMD, 2017b):

1) ozone and the primary ozone precursor pollutants (VOCs and NO_x)
2) Particulate matter (PM_{10} and $PM_{2.5}$), as well as their precursors
3) TACs/HAPs

4) Greenhouse gases

Local

Santa Clara General Plan

General Plan policies related to air quality that are applicable to the project include the following.

Policy 5.3.1-P14: Encourage transportation demand management (TDM) strategies and the provision of bicycle and pedestrian amenities in all new development greater than 25 housing units or more than 10,000 non-residential square feet, and for City employees, in order to decrease use of the single-occupant automobile and reduce vehicle miles traveled, consistent with the Climate Action Plan.

Policy 5.8.5-P1: Require new development and City employees to implement TDM programs that can include site-design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage and recreational facilities.

Policy 5.8.5-P5: Encourage TDM programs that provide incentives for the use of alternative travel modes to reduce the use of single-occupant vehicles.

Policy 5.10.2-P1: Support alternative transportation modes and efficient parking mechanisms to improve air quality.

Policy 5.10.2-P2: Encourage development patterns that reduce vehicle miles traveled and air pollution.

Policy 5.10.2-P3: Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.

Policy 5.10.2-P6: Require “Best Management Practices” for construction dust abatement.

4.3.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
2) 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?	☐	☒	☐	☐
3) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

4.3.2.1 *Significance Criteria*

The project analysis is based upon the general methodologies in the most recent BAAQMD CEQA Guidelines (BAAQMD, 2017c) and significance thresholds for the SFBAAB, including the criteria pollutant thresholds listed in Table 4.3-5.

Table 4.3-5: BAAQMD CEQA Thresholds of Significance			
Pollutant	**Construction Thresholds**	**Operational Thresholds**	
	Average Daily Emissions (lbs/day)	**Average Daily Emissions (lbs/day)**	**Annual Average Emissions (tons/year)**
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
CO	None	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million	10 per one million	
Chronic or Acute Hazard Index	1.0	1.0	
Incremental annual average $PM_{2.5}$	0.3 $\mu g/m^3$	0.3 $\mu g/m^3$	
GHGs – Stationary Source Projects			
CO_2e	None	10,000 MT/yr (11,023 short tons)	
Health Risks and Hazards for Sensitive Receptors (Cumulative from All Sources within 1,000-Foot Zone of Influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		
Annual Average $PM_{2.5}$	0.8 $\mu g/m^3$		
Source: BAAQMD CEQA Guidelines, May 2017.			

4.3.2.2 *Impact Summary*

The conclusions of the air quality analysis are summarized below as responses to CEQA checklist questions. A full discussion of the air quality analysis underlying these conclusions is presented in the following section.

Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan. **(Less than Significant Impact)**

The LBGF and the LDC project would not conflict with or obstruct the implementation of the applicable air quality plan due to the following:

- The LBGF will comply with all applicable rules and regulations of the BAAQMD regarding emissions of criteria pollutants.

- The LBGF will comply with all applicable rules and regulations of the BAAQMD regarding emissions of toxic pollutants.
- The proposed engines at the LBGF will comply with the applicable federal Tier 2 emissions standards for emergency standby electrical generation CI engines.
- The LBGF will comply with all applicable provisions of the applicable 2017 BAAQMD Air Quality Implementation Plan.
- The LBGF will obtain and maintain all required air quality related permits from the BAAQMD, and requirements imposed by the California Energy Commission.

(Less than Significant Impact)

Impact AIR-2:	The project would not 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. **(Less Than Significant Impact Mitigation Incorporated into the Project Design)**

The LBGF project would not 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, due to the following:

- The use of best management practices during the construction phase will ensure that the emissions do not result in a cumulative considerable net increase of any non-attainment pollutants. These emissions are generally short term in nature and vary widely from day to day.
- See offset mitigation requirements under the NSR discussion above.

(Less than Significant Impact with Mitigation Incorporated into the Project Design)

Impact AIR-3:	The project would not expose sensitive receptors to substantial pollutant concentrations. **(Less than Significant Impact)**

The LBGF project would not expose sensitive receptors to substantial pollutant concentrations due to the following:

- The air quality impact analysis presented herein shows that the LBGF will not cause or contribute to a violation of any state or federal ambient air quality standard.
- The construction and operational health risk assessments presented herein indicate that the emissions of toxic air contaminants from the LBGF processes will not cause a significant risk to any sensitive or non-sensitive receptor with respect to cancer or chronic impacts.

(Less than Significant Impact)

Impact AIR-4:	The project would not result in substantial emissions (such as odors) adversely affecting a substantial number of people. **(Less than Significant Impact)**

The LBGF project would not result in other emissions or odors that would adversely affect a substantial number of people due to the following:

- Similar facilities, both larger and smaller in scale, have not been identified as sources of odors that would adversely affect offsite receptors.
- The LBGF and LDC are not one of the project types listed in the BAAQMD CEQA guidelines as producing odors that may affect offsite receptors.
- The analysis has not identified any operational or construction practices, that are planned for use at the project site, that would generate substantial amounts of odors that would affect offsite receptors.

(Less than Significant Impact)

4.3.2.3 *Project Emissions, Air Quality Impact Analysis, and Health Risk Assessment*

Project Emissions

Construction

Project construction emissions of CO, VOCs, NO_x, SO_2, PM_{10}, and $PM_{2.5}$ were evaluated. Detailed construction emission calculations are presented in Appendix AQ4. Onsite construction emissions from construction of the LBGF will result from demolition activities, site preparation and grading activities, building erection and parking lot construction activities, "finish" construction activities, and the use of onsite construction equipment. Construction emissions from the LBGF are negligible but are included in the emission calculations for the LBGF. Offsite construction emissions will be derived primarily from materials transport to and from the site, and worker travel. Emissions from the 24-month construction period were estimated using the CalEEMod program. Estimated criteria pollutant construction emissions for the project are summarized in Table 4.3-6. Construction support data and CalEEMod analysis output are presented in Appendix AQ-4.

The BAAQMD CEQA Air Quality Guidelines considers exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard to be significant. BAAQMD recommends a 1,000-foot zone of influence around project boundaries. Since construction activities are temporary and would occur well over 1,000 feet from the nearest sensitive receptor, community risk impacts from construction activities would be less than significant.

Table 4.3-6: Criteria Pollutant Emissions from Construction Activities							
Scenario	**NO_x**	**CO**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
Avg. Daily Emissions, LBS	18.1	8.83	11.04	0.045	0.39	0.34	NA
Max Project Emissions, Tons	4.18	2.04	2.55	0.0103	0.09 exhaust 0.414 fugitives	0.078 exhaust 0.111 fugitives	970
BAAQMD Thresholds, Lbs/day	54	NA	54	NA	82	54	NA
Exceeds Thresholds	No	NA	No	NA	No	No	NA
Notes: PM_{10} and $PM_{2.5}$ thresholds are exhaust only. Construction schedule is approximately 21 months, or 462 work days (22 days/month). Source: Illingworth/Rodkin CalEEMod analysis, August 2018.							

As shown in Table 4.3-6, construction of the project would not generate VOCs, NO_x, SO_x, PM_{10} and $PM_{2.5}$ emissions in excess of BAAQMD's numeric thresholds. The BAAQMD's CEQA Guidelines consider fugitive dust impacts to be less than significant through the application of best management practices (BMPs).

Mitigation Incorporated into the Project Design:

PD AQ-1: To ensure that fugitive dust impacts are less than significant, the project will implement the BAAQMD's recommended BMPs during the construction phase. These BMPs are incorporated into the design of the project and will include:

- All exposed surfaces (soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day.
- All haul trucks transporting material offsite shall be covered.
- All track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day.
- All vehicle speeds on unpaved surfaces shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks shall be paved as soon as possible. Building pads shall be completed as soon as possible after grading unless seeding or soil binders are used.
- Equipment idling times shall be minimized to 5 minutes per the Air Toxics Control Measure (ATCM). Idling time signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Information on who to contact, contact phone number, and how to initiate complaints about fugitive dust problems will be posted at the site.

(Less than Significant Impact with Mitigation Incorporated into the Project Design)

Operation

Operational emissions of NO_x, VOCs, CO, SO_2, PM_{10}, $PM_{2.5}$, and GHGs were evaluated. Diesel particulate matter (DPM) was the only TAC considered to result from operation of the LBGF. Detailed operation emission calculations are presented in Appendix AQ1. Primary operation emissions are a result of diesel fuel combustion from the standby diesel generators, offsite vehicle trips for worker commutes and material deliveries. Secondary operational emissions from facility upkeep, such as architectural coatings, consumer product use, landscaping, water use, waste generation, natural gas use for comfort heating, and electricity use, were considered de minimus. Each of the primary emission sources are described in more detail below.

Stationary Sources

The project's 45 standby diesel generators will be comprised of the following equipment:

- 44 – Cummins QSK95-G9 Diesel-fired engines, rated at 4288 HP (3000 kWe) at 100% Load
- 1 – Cummins QST30 Diesel-fired engine, rated at 1482 HP (1105 kWe) at 100% Load

The generators proposed for installation are made by Cummins, with a certified Tier 2 rating. These engines will be equipped with diesel particulate filters (DPF) to reduce the diesel particulates to less than or equal to 0.01 grams/brake horse-power hour (g/bhp-hr). All generators would be operated routinely to ensure they would function during an emergency event. Appendix AQ1 presents the detailed emissions calculations for the proposed engines. Appendix AQ2 contains the manufacturers specification sheets for the engines.

During routine readiness testing, criteria pollutants and TACs (as DPM) would be emitted directly from the generators. Criteria pollutant emissions from generator testing were quantified using information provided by the manufacturer, as specified in Appendix AQ1. SO_2 emissions were based on the maximum sulfur content allowed in California diesel (15 parts per million by weight), and an assumed 100 percent conversion of fuel sulfur to SO_2. DPM emissions resulting from diesel stationary combustion were assumed equal to PM_{10}/$PM_{2.5}$ emissions. For conservative evaluation purposes, it was assumed that testing (weekly, monthly, quarterly, annual, and special testing) would occur for no more than 50 hours per year. 50 hours per year per engine is the limit specified by the Airborne Toxic Control Measure for Stationary Toxic Compression Ignition Engines (Title 17, Section 93115, CCR). However, it is the Applicant's experience that each engine will be operated for considerably less than 50 hours a year. Maintenance and readiness testing usually occurs at loads ranging from ten to 100 percent load. For purposes of this application, emissions were assumed to occur at all load ranges. Tables AQ1-1 and AQ1-2 in Appendix AQ1 present a wide range of emissions based upon load points, number of engines tested, etc. The QSK95 engines were evaluated for the following emissions scenarios:

- Scenario 1 - Declared emergency operations, 100 hrs/yr, Tier 2 emissions factors, 100% load, with DPF controls. (BAAQMD Policy limit.) These emissions are not subject to NSR applicability.
- Scenario 2 - Maintenance/Readiness operations, 50 hrs/yr, Tier 2 emissions factors, 100% load, with DPF controls. (ATCM limit.)

- Scenario 3 – Declared emergency operations, 100 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 100% load, with DPF controls. (BAAQMD Policy limit.) These emissions are not subject to NSR applicability.
- Scenario 4 - Maintenance/Readiness operations, 50 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 100% load, with DPF controls. (ATCM limit)
- Scenario 5 - Maintenance/Readiness operations, 50 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 10% load, with DPF controls. (ATCM limit.)
- Scenario 6 - Maintenance/Readiness operations, 50 hrs/yr, Cummins nominal performance emissions factors, 1% load, with DPF controls. (ATCM limit.)

For the small QST30 engines, only Scenarios 1 through 4 were evaluated.

It should be noted that although the engines will be equipped with "active DPF" controls, only $PM_{10}/PM_{2.5}$ were evaluated as "controlled" for purposes of emissions quantification.

The tables which follow present emissions summaries for the two engines for each of the scenarios noted above in terms of the worst case hourly, daily, and annual emissions. Maximum daily emissions are based on the assumption that only ten of the QSK95 engines will be tested on any day (and the engines will not be run concurrently).

Table 4.3-7: Scenario 1 Emissions Summary for QSK95 and QST30 Engines

Period	NOx	CO	VOC	SO_2	$PM_{10}/PM_{2.5}$	CO_2e
QSK95-G9						
Max Hourly, lbs	1871.8	1081.5	124.8	2.1	6.24	-
Max Daily, lbs	44922.9	25955.5	2994.9	49.9	149.7	-
Max Annual, tons	93.59	54.07	6.24	0.10	0.31	10321
QST30						
Max Hourly, lbs	14.7	8.49	0.98	0.02	0.05	-
Max Daily, lbs	352.9	203.9	23.5	0.39	1.18	-
Max Annual, tons	0.74	0.42	0.05	0.0005	0.0012	82
Scenario 1 - Declared emergency operations, 100 hrs/yr, Tier 2 emissions factors, 100% load, with DPF controls. ***Emissions from Scenario 1 are NOT subject to NSR applicability***.						

Table 4.3-8: Scenario 2 Emissions Summary for QSK95 and QST30 Engines						
Period	**NOx**	**CO**	**VOC**	**SO_2**	**$PM_{10}/PM_{2.5}$**	**CO_2e**
QSK95-G9						
Max Hourly, lbs	42.54	24.58	2.84	0.047	0.142	-
Max Daily, lbs	425.41	245.8	28.36	0.473	1.42	-
Max Annual, tons	46.8	27.0	3.1	0.05	0.16	5161
QST30						
Max Hourly, lbs	14.7	8.49	0.98	0.02	0.05	-
Max Daily, lbs	14.7	8.49	0.98	0.02	0.05	-
Max Annual, tons	0.37	0.21	0.02	0.0004	0.0012	41
Scenario 2 - Maintenance/Readiness operations, 50 hrs/yr, Tier 2 emissions factors, 100% load, with DPF controls.						

Table 4.3-9: Scenario 3 Emissions Summary for QSK95 and QST30 Engines						
Period	**NOx**	**CO**	**VOC**	**SO_2**	**$PM_{10}/PM_{2.5}$**	**CO_2e**
QSK95-G9						
Max Hourly, lbs	1817.7	207.98	95.7	2.1	6.24	-
Max Daily, lbs	43625.1	4991.4	2296.1	49.91	149.7	-
Max Annual, tons	90.89	10.40	4.78	0.10	0.31	10321
QST30						
Max Hourly, lbs	13.66	1.63	0.72	0.016	0.033	-
Max Daily, lbs	327.8	39.21	17.3	0.39	0.78	-
Max Annual, tons	0.68	0.08	0.04	0.0008	0.00165	82
Scenario 3 - Declared emergency operations, 100 hrs/yr, EPA D2 cycle weighted emissions factors, 100% load, with DPF controls. ***Emissions from Scenario 3 are NOT subject to NSR applicability***.						

Table 4.3-10: Scenario 4 Emissions Summary for QSK95 and QST30 Engines						
Period	**NOx**	**CO**	**VOC**	**SO_2**	**$PM_{10}/PM_{2.5}$**	**CO_2e**
QSK95-G9						
Max Hourly, lbs	41.31	4.73	2.17	0.047	0.142	-
Max Daily, lbs	413.1	47.27	21.74	0.473	1.42	-
Max Annual, tons	45.44	5.20	2.39	0.05	0.156	5161
QST30						
Max Hourly, lbs	13.66	1.63	0.72	0.016	0.033	-
Max Daily, lbs	13.66	1.63	0.72	0.016	0.033	-
Max Annual, tons	0.34	0.04	0.02	0.00025	0.0008	41
Scenario 4 – Maintenance/Readiness operations, 50 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 100% load, with DPF controls.						

Table 4.3-11 presents maximum daily and annual emissions data for the various testing scenarios in comparison to the BAAQMD CEQA significance thresholds.

Table 4.3-11: Facility Scenario Emissions and BAAQMD CEQA Significance Levels						
Scenario	**Lbs/Day**					
	NO_x	**CO**	**VOC**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
BAAQMD CEQA Thresholds	54	NA	54	NA	82	54
Worst Case Daily Emissions[1]	425.4	245.8	28.4	0.473	1.42	1.42
Significance Threshold Exceeded	Yes	NA	No	NA	No	No
Scenario	**Tons/Yr**					
	NO_x	**CO**	**VOC**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
BAAQMD CEQA Thresholds	10	NA	10	NA	15	10
Worst Case Annual Emissions[2]	47.2	27.3	3.14	0.05	0.16	0.16
Significance Threshold Exceeded	Yes	NA	No	NA	No	No
[1] Based on the emissions from Scenario 2 for a 10 engine test day for the QSK95. [2] Based on the summation of the QSK95 and QST30 engine emissions under Scenario 2. [2] Worst case CO_2e emissions are 5202 tpy.						

The following should be noted with respect to Table 4.3-11 above.

1. NO_x emissions exceed the BAAQMD CEQA significance levels on the days when the 10 engine readiness tests occur, and on a TPY basis (total emissions from all engines).
2. The emissions of NO_x will be mitigated through the participation in the BAAQMD ERC Bank, or other alternative methods as negotiated with the BAAQMD.

Table 4.3-12 presents the summation of emissions for all engines for the maximum of the scenarios noted above, i.e., Scenario 1 plus Scenario 2 to meet the 150 hours per year criteria per the BAAQMD permitting policy criteria.

Table 4.3-12: BAAQMD 150 Hour per Year Emissions Summation (tons per year)						
Engines	**NOx**	**CO**	**VOC**	**SO2**	**PM10/2.5**	**CO_2e**
QSK95 and QST30	137.4	15.7	7.2	0.15	0.47	15605
Summation of Scenario 3 and 4 for both engines. Based on EPA D2 cycle factors. ***These values are NOT the NSR applicability values.***						

Table 4.3-13 presents data on the DPM emissions levels (worst case) for both models of engines.

Table 4.3-13: Toxic Air Contaminant (DPM) Emissions from the Proposed Engines (per engine basis)		
Scenario	**QSK95**	**QST30**
	DPM Emissions	
Maximum Annual, lbs/yr	4.75	1.65
Maximum Hourly, lbs	0.095	0.033
Note: DPM is the approved surrogate compound for diesel fuel combustion for purposes of health risk assessment. Annual emissions for each engine are based on the max allowed runtime of 50 hours per year.		

Table 4.3-14 presents the hourly and annual fuel use values for the maximum operational scenario as outlined above.

Table 4.3-14: Engine Fuel Use Values		
Scenario	**QSK95**	**QST30**
	Fuel Use, gallons (per engine basis)	
Maximum Annual, gals/yr	10,350	3,610
Maximum Hourly, gals/hr	207	72.2
Total Annual Fuel Use (All Engines)		
Annual Fuel Use, gals/yr	455,400	3,610

Miscellaneous Operational Emissions

Miscellaneous emissions from operational activities such as worker travel, deliveries, energy and fuel use for facility electrical, heating and cooling needs, periodic use of architectural coatings, landscaping, etc. were evaluated by CalEEMod. These emissions are presented in Table 4.3-15.

Table 4.3-15: Miscellaneous Operational Emissions						
Scenario	**Lbs/Day**					
	NO_x	**CO**	**VOC**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
BAAQMD CEQA Thresholds	54	NA	54	NA	82	54
All Sources Lbs/avg day	0.155	0.53	2.06	0.0018	0.17	0.046
TPY						
BAAQMD CEQA Thresholds	10	NA	10	NA	15	10
All Sources Tons/yr	0.0283	0.0964	0.376	0.0003	0.031	0.0085
Exceeds Thresholds	No	NA	No	NA	No	No
Note: assumes the data center is manned 365 days/yr. All source category includes, mobile worker travel, deliveries, energy use, fuel use, waste disposal, water use, and misc area sources. Source: ADI CalEEMod analysis, March 2020.						

Air Quality Impact Analysis

The 15.45-acre project site (north parcel), located at 2825 Lafayette Avenue in the City of Santa Clara (Santa Clara County), is currently developed with two two-story office buildings and associated paved parking and loading areas (total of 326,400 square feet) (APN 224-04-093). The project proposes to demolish the existing improvements on the site to construct a multi-story 576,120 square foot data center building. The LDC building would house computer servers for private clients in a secure and environmentally controlled structure. The LBGF would be designed to provide 99 megawatts (MW) of Information Technology (IT) power.

Modeling Overview

The evaluation of the potential air quality impacts and health risks were based on the estimate of the ambient air concentrations that could result from LBGF air emission sources. This section discusses the selection of the dispersion model, the data that was used in the dispersion model (pollutants modeled with appropriate averaging times, source characterization, building downwash, terrain, and meteorology), etc.

Assessments of ambient concentrations resulting from pollutant emissions (called air quality impacts) are normally conducted using USEPA-approved air quality dispersion models. These models are based on mathematical descriptions of atmospheric diffusion and dispersion processes in which a pollutant source impact can be calculated over a given area and for a specific period of time (called averaging period). By using mathematical models, the assessment of emissions can be determined for both existing sources as well as future sources not yet in operation. Inputs required by most dispersion models, which must be specified by the user, include the following:

- Model options, such as averaging time to be calculated;
- Meteorological data, used by the model to estimate the dispersion conditions experience by the source emissions;
- Source data, such as source location and characteristics – stack emissions like those considered here are modeled as “point” sources, which require user inputs of the release height, exit temperature and velocity, and stack diameter (used by the dispersion model to estimate the mechanical and buoyant plume rise that will occur due to the release of emissions from a stack); and
- Receptor data, which are the location(s) of the given area where ambient concentrations are to be calculated by the dispersion model.

Model Selection

To estimate ambient air concentrations, the latest version (version 19191) of the AERMOD dispersion model was used. AERMOD is appropriate for use in estimating ground-level short-term ambient air concentrations resulting from non-reactive buoyant emissions from sources located in simple, intermediate, and complex terrain. AERMOD is the preferred guideline model recommended by USEPA for these types of assessments and is based on conservative assumptions (i.e., the model tends to over-predict actual impacts by assuming steady state conditions, no pollutant loss through conservation of mass, no chemical reactions, etc.). AERMOD is capable of assessing impacts from a

variety of source types such as point, area, line, and volume sources (as noted above, point source types are used to model stack sources like the LBGF engine emissions); downwash effects; gradual plume rise as a function of downwind distance; time-dependent exponential decay of pollutants; and can account for settling and dry deposition of particulates (all LBGF emissions were conservatively modeled as non-reactive gaseous emissions). The model is capable of estimating concentrations for a wide range of averaging times (from one hour to the entire period of meteorological data provided).

AERMOD calculates ambient concentrations in areas of simple terrain (receptor base elevations below the stack release heights), intermediate terrain (receptor base elevations between stack release and final plume height), and complex terrain (receptor base elevations above final plume height). AERMOD assesses these impacts for all meteorological conditions, including those that would limit the amount of final plume rise. Plume impaction on elevated terrain, such as on the slope of a nearby hill, can cause high ground level concentrations, especially under stable atmospheric conditions. Due to the relatively flat nature of the LBGF project terrain area, including the surrounding properties, plume impaction effects would not be expected to occur. AERMOD also considers receptors located above the receptor base elevation, called flagpole receptors.

Another dispersion condition that can cause high ground level pollutant concentrations is caused by building downwash. Building downwash can occur during high wind speeds or a building or structure is in close proximity to the emission source. This can result in building wake effects where the plume is drawn down toward the ground by the lower pressure region that exists in the lee side (downwind) of the building or structure. This AERMOD feature was also used in modeling the LBGF emission sources as described later.

Model Input Options

Model options refer to user selections that account for conditions specific to the area being modeled or to the emissions source that needs to be examined. Examples of model options selected for this analysis includes the use of multiple flagpole heights for each receptor modeled and the urban dispersion option (using a Santa Clara County population of 1,938,153). Land use in the immediate area surrounding the project site is characterized as “urban”. This is based on the land uses within the area circumscribed by a three kilometer (km) radius around the project site, which is greater than 50 percent urban. Therefore, in the modeling analyses, the urban dispersion option was selected.

AERMOD also supplies recommended defaults for the user for other model options. This analysis was conducted using AERMOD in the regulatory default mode, which includes the following additional modeling control options:

- adjusting stack heights for stack-tip downwash,
- using upper-bound concentration estimates for sources influenced by building downwash from super-squat buildings,
- incorporating the effects of elevated terrain,
- employing the USEPA-recommended calms processing routine, and
- employing the USEPA-recommended missing data processing routine.

Calculation of chemical concentrations for use in the impact and exposure analysis requires the selection of appropriate concentration averaging times. Average pollutant concentrations ranging from one hour to annual based on the meteorological data were calculated for each LBGF source and the facility in total.

According to the Auer land use classification scheme, a three-kilometer radius boundary around the proposed site yields a predominately "urban" classification. This is consistent with the current land use and zoning designation for the site and surrounding area as "commercial, and light and heavy industrial".

Meteorological Data - Modeling Inputs

AERMOD requires a meteorological input file to characterize the transport and dispersion of pollutants in the atmosphere. Surface and upper air meteorological data inputs, along with surface parameter data describing the land use and surface characteristics near a site, are first processed using AERMET, the meteorological preprocessor to AERMOD. The output files generated by AERMET are the surface and upper air meteorological input files required by AERMOD.

AERMOD uses hourly meteorological data to characterize plume dispersion. AERMOD calculates the dispersion conditions for each hour of meteorological data for the emission sources modeled at the user-specific receptor locations. The resulting 1-hour impacts are then averaged by AERMOD for the averaging time(s) specified by the user (accounting for calm winds and missing meteorological data as specified in the model options). Meteorological data from the San Jose International Airport were provided by the BAAQMD for the five years of 2013 through 2017, inclusive. The representativeness of the meteorological data is dependent on the proximity of the meteorological monitoring site to the area under consideration; the complexity of the terrain, the exposure of the meteorological monitoring site, and the period of time during which the data are collected. The data was collected approximately three kilometers from the eastern edge of the LBGF project boundary and were provided by BAAQMD as the most appropriate meteorological data for this modeling analysis. The data were processed by BAAQMD with AERMET (version 18081), AERMOD's meteorological data preprocessor module.

The BAAQMD LBGF meteorological data consists of surface measurements including wind speed, wind direction, temperature, and solar radiation, which were combined with National Weather Service upper air data from the Oakland International Airport. The USEPA-recommended 90% completeness criteria are met for all modeled parameters in the BAAQMD meteorological data.

Building and Receptors – Modeling Inputs

The effects of building downwash on facility emissions were included in the modeling assessment. The **P**lume **Ri**se **M**odel **E**nhancements to the USEPA **B**uilding **P**rofile **I**nput **P**rogram (BPIP-PRIME, version 04274) was used to determine the direction-specific building downwash parameters. The PRIME enhancements in AERMOD calculate fields of turbulence intensity, wind speed, and slopes of the mean streamlines as a function of projected building shape. Using a numerical plume rise model, the PRIME enhancements in AERMOD determine the change in plume centerline location and the rate of plume dispersion with downwind distance. Concentrations are then predicted by AERMOD in both the near and far wake regions, with the plume mass captured by the near wake treated separately from the uncaptured primary plume and re-emitted to the far wake as a volume

source. There were several nearby offsite structures that were also included in BPIP-PRIME inputs. Figure AQ3-1 in Appendix AQ3 presents the building data used in the downwash analysis.

Receptor grids were generated along the fence line (≤10 meter spacing), from the fence line to 300 meters (20 meter spacing), from 300 meters to one kilometer (50-meter spacing), from 1.0 to 5.0 km (200-meter spacing). If any of the maximum impacts occurred on receptors with spacing greater than 20 meters, a refined grid with 20-meter resolution would be created and extended outwards by 500 meters in all directions. All receptor and source locations are referenced in meters using the Universal Transverse Mercator (UTM) Cartesian coordinate system based on the North American Datum of 1983 (NAD83) for Zone 10.

The latest version of AERMAP (version 18081) was used to determine receptor elevations and hill-slope factors utilizing USGS's 1-degree square National Elevation Dataset (NED). NED spacings were 1/3" (~10 meters) for the fence line, 20-meter, 50-meter, and 100-meter spaced receptor grids and 1" (~30 meters) for 200-meter and 500-meter spaced receptor grids and sensitive receptors. Electronic copies of the BPIP-PRIME and AERMAP input and output files, including the NED data, are included with the application will be submitted to Staff electronically.

Source Data – Modeling Inputs

Emissions and stack parameters for the 33 Cummins diesel engines are presented in Appendix AQ-1 and AQ-3 and were used to develop the modeling inputs. Stack parameters (e.g., stack height, exit temperature, stack diameter, and stack exit velocity) were based on the parameters given by the engine manufacturer and the Applicant. Stack locations for the proposed sources were matched to show their actual location based on the proposed facility plot plan. Appendix AQ-3 presents the locations of the LBGF sources and the building outlines considered in the downwash analysis. Stack base elevations were given a common base elevation based on the range of elevations calculated with AERMAP for the stack locations.

Impact Analysis Summary

Operational characteristics of the diesel engines, such as emission rate, exit velocity, and exit temperature, vary by operating loads. The engines could be operated over a load conditions from one to 100 percent. Thus, an air quality screening analysis was performed that considered these effects to determine the worst-case scenario to include in the refined modeling analyses. Based on similar projects, the 100% load case always produces the maximum ground-based concentrations. However, two load screenings were performed for loads at 1 and 100%, with a source group for each individual engine (only one engine will be tested at any one time). The engines were assumed to be tested anytime from 7 AM to 5 PM (controlled using the EMISFACT/HROFDY model option). Although the each engines will typically only be tested individually for up to one hour at any one time, each engine was assumed to operate up to 10 hours per day (7AM-5PM) to conservatively represent 10 different engines operating one hour each in any one day for 3-hour, 8-hour, and 24-hour averaging times. Thus, the worst-case stack condition and the worst-case engine location could be determined from the screening analysis. All 45 engines were assumed to be tested for annual averages, with emissions proportioned accordingly. The screening results are presented in Appendix AQ-3.

Based on the results of the screening analyses, all LBGF sources were modeled in the refined analyses for comparisons with the annual CAAQS and NAAQS and the short-term NAAQS with

multi-year statistical forms (1-hour NO_2 and SO_2 and 24-hour $PM_{2.5}$ and PM_{10}). Impacts during normal testing operations were based on the worst-case screening condition. Since the engines would each be tested far less than 100 hours/year, the annual average emission rate was included in 1 hour NO_2 and SO_2 NAAQS modeling analyses at the annual average emission rates per EPA guidance due to the statistical nature of these standards (it was the engines were modeled at the maximum 1-hour emission rate for the CAAQS).

For the 1-hour NO_2 modeling assessments, the EPA Plume Molar Volume Molar Ratio Method (PVMRM) was used in the refined modeling analyses with an in-stack NO_2/NO_x ratio of 0.1 (10%) based on a conservative assessment of this type/size of engine in EPA's ISR database.

Hourly ozone data from the nearby 158 East Jackson Street monitoring site in San José was used, processed as follows:

- one-two consecutive missing/invalid hours were replaced by interpolating the last/next valid hourly measurement;
- up to 12 consecutive missing/invalid hours were replaced by the maximum of either the last/next valid hourly measurement or valid measurements from the same hour of the two days before or after the missing data;
- two occurrences of 27 and 50 consecutive hours of missing data were replaced in the same way as previous, and
- one occurrence of 338 consecutive hours of missing data were replaced with the maximum of the valid measurements for that hour or the hour before or after for the 10 days before or after the missing the missing value.

After missing data were replaced as described above, no missing data remained.

NO_2 background data, also from the 158 East Jackson Street monitoring site, were calculated on a contiguous seasonal basis by hour for the last three years of monitoring data (December 2014 to November 2017), consistent with CAPCOA and USEPA guidance. The maximum hourly value for the season/hour were added to the modeled NO_2 concentration for the 1-hour CAAQS assessment. The three-year average of the second-highest hourly value for the season/hour were added to the modeled NO_2 concentration for the NAAQS assessment. The ozone data are input as a separate file (in PPB) while the background NO_2 data (in ug/m^3) are included in the AERMOD control file. Assessment with the CAAQS is based on the maximum 1-hour NO_2 concentration (with and without background). NO_2 NAAQS compliance based on the five-year average of the 98^{th} percentile daily maximum annual 1-hour impacts with background concentration (NO_2 SIL for NAAQS compliance based on 5-year average of the annual 1-hour maximum impacts without background concentrations).

Based on the results of the screening and refined modeling analyses, the modeled concentration are presented in Table 4.3-16.

Table 4.3-16: Modeled Concentrations and Ambient Air Quality Standards						
Pollutant	**Averaging Period**	**Maximum Concentration (µg/m³)**	**Background (µg/m³)**	**Total (µg/m³)**	**Ambient Air Quality Standards (µg/m³)**	
					CAAQS	**NAAQS**
3-/8-/24-Hour Maxima shown for one engine operating up to 10 hours/day (7AM-5PM)						
NO_2*	1-hour maximum (CAAQS)	N/A	N/A	198.06	339	-
	3-year average of 1-hour yearly 98th % (NAAQS)	N/A	N/A	95.65	-	188
	Annual maximum	5.00	24.5	29.5	57	100
CO	1-hour maximum	369.13	2,863		23,000	40,000
	8-hour maximum	240.20	2,405		10,000	10,000
SO_2	1-hour maximum (CAAQS)	0.66	18.1	18.8	655	-
	3-year average of 1-hour yearly 99th % (NAAQS)	0.59	7.1	7.6	-	196
	3-hour maximum	0.57	18.1	18.7	-	1,300
	24-hour maximum	0.17	2.9	3.1	105	365
	Annual maximum	0.0063	0.5	0.51	-	80
PM_{10}	24-hour maximum (CAAQS)	**0.34**	**122**	**122.3**	**50**	**-**
	24-hour 6th highest over 5 years (NAAQS)	**0.30**	**98**	**98.3**	**-**	**150**
	Annual maximum (CAAQS)	**0.014**	**23.1**	**23.1**	**20**	**-**
$PM_{2.5}$	3-year average of 24-hour yearly 98th %	0.173	42	42.2	-	35
	Annual maximum (CAAQS)	0.014	12.8	12.8	12	-
	3-year average of annual concentrations (NAAQS)	0.011	10.2	10.2	-	12.0
* 1-hour NO_2 impacts evaluated with Plume Volume Molar Ratio Method (PVMRM), with the maximum seasonal hourly NO_2 background value already added by AERMOD. Annual NO_2 impacts evaluated with Ambient Ratio Method #2 (ARM2) with USEPA-default minimum/maximum NO_2/NOx ambient ratios of 0.5/0.9.						

The air quality modeling support data will be submitted to Staff electronically.

Based on the modeling results in Table 4.3-16, the only combined modeled impacts and background concentrations greater than the standards are for the 24-hour and annual PM_{10} CAAQS and the 24-hour $PM_{2.5}$ NAAQS and annual $PM_{2.5}$ CAAQS. These exceedances are only because the background concentrations already exceed the standards. Modeled project impacts in these instances are less than significance levels. Thus, the project will not cause or contribute to an exceedance of any air quality standard for any averaging time period. Thus, and the project will comply with the CAAQS and

NAAQS. Additionally, the project impacts for $PM_{2.5}$ are less than the BAAQMD CEQA significant impact levels.

Public Health and Health Risk Assessment

This section presents the methodology and results of a human health risk assessment performed to assess potential impacts and public exposure associated with airborne emissions from the routine operation of the LBGF project.

Air will be the dominant pathway for public exposure to chemical substances released by the project. Emissions to the air will consist primarily of combustion by-products produced by the diesel-fired emergency standby engines. Potential health risks from combustion emissions will occur almost entirely by direct inhalation. To be conservative, additional pathways were included in the health risk modeling; however, direct inhalation is considered the most likely exposure pathway. The risk assessment was conducted in accordance with guidance established by the California Office of Environmental Health Hazard Assessment (OEHHA 2015) and the California Air Resources Board.

Combustion byproducts with established CAAQS or NAAQS, including oxides of nitrogen (NOx), carbon monoxide, sulfur dioxide, and fine particulate matter were addressed in the previous Air Quality section.

Affected Environment

Sensitive receptors are defined as groups of individuals that may be more susceptible to health risks due to chemical exposure. Schools (public and private), day care facilities, convalescent homes, and hospitals are of particular concern. The nearest sensitive receptors, by type, are listed in Table 4.3-17. There are no sensitive receptors of any type within 1,000 feet of the facility boundary. Appendix AQ5 contains support materials for the facility health risk assessment, such as: a listing of sensitive receptors within the facility regional area, etc. HAPs emissions evaluations are presented in Appendix AQ1.

Table 4.3-17: Sensitive Receptors Nearfield of the LBGF Site

Receptor Type	UTM Coordinates	Distance from Site, ft.	Elevation, AMSL ft.
Nearest Residence	593024.94, 4135677.42	3,486	56
Nearest Hospital	589321, 4136778	12,750	51
Nearest School	592005.25, 4136664.00	3,418	54
Nearest Daycare	594941, 4139336	10,200	58
Nearest College/Univ.	593425, 4138352	5,290	24

Source: Google Earth Image 12/2019

The nearest residences are located to the north of the site at a distance of approximately 3,486 feet.

Air quality and health risk data presented by CARB in the 2013 Almanac of Emissions and Air Quality (latest version available, CARB 2013) for the state shows that over the period from the mid-1990s through 2013, the average concentrations for DPM have been substantially reduced, and the associated health risks for the state are showing a steady downward trend as well. This same trend has occurred in the BAAQMD.

Environmental Consequences

Significance Criteria

Cancer Risk

Cancer risk is the probability or chance of contracting cancer over a period of time normally defined as either 30 or 70-years depending on the project type and agency risk procedures. Carcinogens are not assumed to have a threshold below which there would be no human health impact. In other words, any exposure to a carcinogen is assumed to have some probability of causing cancer; the lower the exposure, the lower the cancer risk (i.e., a linear, no-threshold model). Under various state and local regulations, an incremental cancer risk greater than 10-in-one million due to a project is considered to be a significant impact on public health. For example, the 10-in-one-million risk level is used by the Air Toxics Hot Spots (AB 2588) program and California's Proposition 65 as the public notification level for air toxic emissions from existing sources.

Non-Cancer Risk

Non-cancer health effects can be either chronic or acute. In determining potential non-cancer health risks (chronic and acute) from air toxics, it is assumed there is a dose of the chemical of concern below which there would be no impact on human health. The air concentration corresponding to this dose is called the Reference Exposure Level (REL). Non-cancer health risks are measured in terms of a hazard quotient, which is the calculated exposure of each contaminant divided by its REL. Hazard quotients for pollutants affecting the same target organ are typically summed with the resulting totals expressed as hazard indices for each organ system. A hazard index of less than 1.0 is considered to be an insignificant health risk. For this health risk assessment, all hazard quotients were summed regardless of target organ. This method leads to a conservative (upper bound) assessment. RELs used in the hazard index calculations were those published in the CARB/OEHHA listings dated August 2018.

Chronic toxicity is defined as adverse health effects from prolonged chemical exposure, caused by chemicals accumulating in the body. Because chemical accumulation to toxic levels typically occurs slowly, symptoms of chronic effects usually do not appear until long after exposure commences. The lowest no-effect chronic exposure level for a non-carcinogenic air toxic is the chronic REL. Below this threshold, the body is capable of eliminating or detoxifying the chemical rapidly enough to prevent its accumulation. The chronic hazard index was calculated using the hazard quotients calculated with annual concentrations.

Acute toxicity is defined as adverse health effects caused by a brief chemical exposure of no more than 24 hours. For most chemicals, the air concentration required to produce acute effects is higher than the level required to produce chronic effects because the duration of exposure is shorter. Because acute toxicity is predominantly manifested in the upper respiratory system at threshold exposures, all hazard quotients are typically summed to calculate the acute hazard index. One-hour average concentrations are divided by acute RELs to obtain a hazard index for health effects caused by relatively high, short-term exposure to air toxics. Since this assessment considers only DPM, and DPM has no acute REL, acute HI values were not calculated. The following receptor descriptors are used herein:

- PMI – Point of maximum impact – this receptor represents the highest concentration and risk point on the receptor grid for the analysis under consideration.
- MEIR – Maximum exposed individual residential receptor – this receptor represents the maximum impacted actual residential location on the grid for the analysis under consideration.
- MEIW - Maximum exposed individual worker receptor – this receptor represents the maximum impacted actual worker location on the grid for the analysis under consideration.
- MEIS - Maximum exposed individual sensitive receptor – this receptor represents the maximum impacted actual sensitive location on the grid for the analysis under consideration. This location is a non-residential sensitive receptor, i.e., school, hospital, daycare center, convalescent home, etc.

Construction Phase Impacts

The proposed project would be a source of air pollutant emissions during project construction. The BAAQMD CEQA Air Quality Guidelines considers exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard to be significant. BAAQMD recommends a 1,000-foot zone of influence around project boundaries. Results of the construction related health risk assessment indicate that the cancer risk at the construction PMI would be 2.65E-6 (0.00000265). This value is well below the significance threshold for construction health risk impacts. Since construction activities are temporary and would occur well over 1,000 feet from the nearest sensitive receptor community risk impacts from construction activities would be less than significant.

Operational Phase Impacts

Environmental consequences potentially associated with the project are potential human exposure to chemical substances emitted into the air. The human health risks potentially associated with these chemical substances were evaluated in a health risk assessment. The chemical substance potentially emitted to the air from the proposed facility is DPM. DPM is the approved surrogate compound for diesel fuel combustion pursuant to CARB and EPA.

Emissions of criteria pollutants will adhere to NAAQS or CAAQS as discussed in the Ambient Air Quality section. The proposed facility emergency electrical backup engines will be certified as EPA Tier 2 units and as such they meet the BACT requirements of the BAAQMD. These engines are equipped with DPFs. Finally, air dispersion modeling results show that emissions will not result in concentrations of criteria pollutants in air that exceed ambient air quality standards (either NAAQS or CAAQS). These standards are intended to protect the general public with a wide margin of safety. Therefore, the project is not anticipated to have a significant impact on public health from emissions of criteria pollutants.

Potential impacts associated with emissions of toxic pollutants to the air from the proposed facility were addressed in a health risk assessment, with support data presented in Appendix AQ5. The risk assessment was prepared using guidelines developed by OEHHA and CARB, as implemented in the latest version of the HARP model (ADMRT 19121). The BAAQMD risk assessment options in HARP were used for all analyses (BAAQMD 2016).

Public Health Impact Study Methods

Emissions of toxic pollutants potentially associated with the facility were estimated using emission factors for PM_{10} derived from the New Source Performance Standards for compression ignited engines (40 CFR 60 Subpart IIII-EPA Tier 2 emissions standards), the EPA D2 cycle weighted emissions values, and the Caterpillar supplied emissions factors for the ten percent load case.

Concentrations of these pollutants in air potentially associated with the emissions were estimated using dispersion modeling as discussed in the Air Quality section. Modeling allows the estimation of both short-term and long-term average concentrations in air for use in a risk assessment, accounting for site-specific terrain and meteorological conditions. Health risks potentially associated with the estimated concentrations of pollutants in air were characterized in terms of excess lifetime cancer risks, or comparison with reference exposure levels for non-cancer health effects. The following receptor descriptors are used herein:

- PMI – Point of maximum impact – this receptor represents the highest concentration and risk point on the receptor grid for the analysis under consideration.
- MEIR – Maximum exposed individual residential receptor – this receptor represents the maximum impacted actual residential location on the grid for the analysis under consideration.
- MEIW - Maximum exposed individual worker receptor – this receptor represents the maximum impacted actual worker location on the grid for the analysis under consideration.
- MEIS - Maximum exposed individual sensitive receptor – this receptor represents the maximum impacted actual sensitive location on the grid for the analysis under consideration. This location is a non-residential sensitive receptor, i.e., school, hospital, daycare center, convalescent home, etc.

Health risks potentially associated with concentrations of carcinogenic pollutants in air were calculated as estimated excess lifetime cancer risks. The excess lifetime cancer risk for a pollutant is estimated as the product of the concentration in air and a unit risk value. The unit risk value is defined as the estimated probability of a person contracting cancer as a result of constant exposure to an ambient concentration of 1 $\mu g/m^3$ over a 70-year lifetime. In other words, it represents the increased cancer risk associated with continuous exposure to a concentration in air over a pre-defined period, i.e., usually a 30 or 70-year lifetime. Evaluation of potential non-cancer health effects from exposure to short-term and long-term concentrations in air was performed by comparing modeled concentrations in air with the RELs. An REL is a concentration in air at or below which no adverse health effects are anticipated. RELs are based on the most sensitive adverse effects reported in the medical and toxicological literature. Potential non-cancer effects were evaluated by calculating a ratio of the modeled concentration in air and the REL. This ratio is referred to as a hazard quotient. The unit risk values and RELs used to characterize health risks associated with modeled concentrations in air were obtained from the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values (CARB 9/2019) and are presented in Table 4.3-18.

Table 4.3-18: Toxicity Values Used to Characterize Health Risks			
TAC	**Unit Risk Factor (µg/m3)-1**	**Chronic Reference Exposure Level (µg/m3)**	**Acute Reference Exposure Level (µg/m3)**
DPM	.0003	5	--
Source: CARB/OEHHA, 8/2018.			

Table 4.3-19 delineates the maximum hourly and annual emissions of the identified air toxic pollutants (DPM) from the emergency backup engines.

Table 4.3-19: Maximum LBGF Hourly, Daily, and Annual Air Toxic Emissions				
Emergency Standby Engines (per engine basis)				
Engine Model	**Toxic**	**Max Hour Emissions, Lbs**	**Max Daily Emissions, Lbs**	**Max Annual Emissions Lbs**
QSK95	DPM	0.095	-	4.75
QST30	DPM	0.033	-	1.65
Note: Engines are equipped with diesel particulate filters at 0.01 g/bhp-hr				

Characterization of Risks from Toxic Air Pollutants

The excess lifetime cancer risk associated with concentrations in air estimated for the LBGF PMI location is estimated to be 0.00000595 (5.95E-6 or 5.95 per million). Excess lifetime cancer risks less than 0.00001 (10×10^{-6}), for sources with T-BACT, are unlikely to represent significant public health impacts that require additional controls of facility emissions. Risks higher than 0.000001 (1×10^{-6}) may or may not be of concern, depending upon several factors. These include the conservatism of assumptions used in risk estimation, size of the potentially exposed population and toxicity of the risk-driving chemicals. Health effects risk thresholds are listed on Table 4.3-20. Risks associated with pollutants potentially emitted from the facility are presented in Table 4.3-21 and Table 4.3-22. The chronic hazard indices for all scenarios are well below 1.0. It should be noted that DPM does not currently have an acute hazard index value, and as such, acute health effects were not evaluated in the HRA. Further description of the methodology used to calculate health risks associated with emissions to the air can be found in the HARP User's Manual dated 12/2003 and the ADMRT Manual dated 3/2015 (CARB 2015). As described previously, human health risks associated with emissions from the proposed facility are unlikely to be higher at any other location than at the location of the PMI. If there is no significant impact associated with concentrations in air at the PMI location, it is unlikely that there would be significant impacts in any other location in the vicinity of the facility.

Table 4.3-20: Health Risk Significance Thresholds			
Risk Category	**Significance Thresholds**		
	BAAQMD Project Risk	**BAAQMD Net Project Risk**	**State of California**
Cancer Risk	10 in one million	10 in one million	<= 1 in a million w/o TBACT <=10 in a million w/TBACT
Chronic Hazard Index	1.0	1.0	1.0
Acute Hazard Index	1.0	1.0	1.0
Cancer (T-BACT required)	>1 in a million Chronic HI > 0.20		See above.
Cancer Burden	NA		1.0
Source: Regulation 2 Rule 5, NSR for Toxic Air Contaminants			

Table 4.3-21: LBGF Residential/Sensitive Health Risk Assessment Summary						
Location	**Receptor #**	**UTM**	**Cancer Risk**	**Chronic HI**	**Acute HI**	**Cancer Burden**
PMI	51	593354.91, 4136644.49	2.56E-06	0.000865	NA	NA
MEIR	3628	593024.94, 4135677.43	3.76E-08	0.0000127	NA	NA
MEIS	4531	592005.25, 4136664.00	4.29E-08	0.0000145	NA	NA
Notes: See acronym definitions above.						

Table 4.3-22: LBGF Worker Health Risk Assessment Summary						
Location	**Receptor #**	**UTM**	**Cancer Risk**	**Chronic HI**	**Acute HI**	**Cancer Burden**
PMI	51	593354.9, 4136644.49	1.12E-06	0.000865	NA	NA
MEIW	1608	593397, 4136613	1.08E-06	0.000833	NA	NA
Notes: See acronym definitions above.						

Cancer risks potentially associated with facility emissions also were not assessed in terms of cancer burden. Cancer burden is a hypothetical upper-bound estimate of the additional number of cancer cases that could be associated with emissions from the facility. Cancer burden is calculated as the worst-case product of excess lifetime cancer risk, at the $1x10^{-6}$ (0.0000010) isopleth and the number of individuals at that risk level. Cancer burden evaluations are not required by the BAAQMD.

The chronic non-cancer hazard quotient associated with concentrations in air are shown in Table 4.3-21. The chronic non-cancer hazard quotient for all target organs fall below 1.0. As described previously, a hazard quotient less than 1.0 is unlikely to represent significant impact to public health. Since DPM does not have an acute REL, no acute hazard index or quotient was calculated. As described previously, human health risks associated with emissions from the proposed facility are

unlikely to be higher at any other location than at the location of the PMI. If there is no significant impact associated with concentrations in air at the PMI location, it is unlikely that there would be significant impacts in any other location in the vicinity of the facility.

Detailed risk and hazard values are provided in the HARP output which will be submitted to Staff electronically.

The estimates of excess lifetime cancer risks and non-cancer risks associated with chronic or acute exposures fall below thresholds used for regulating emissions of toxic pollutants to the air. Historically, exposure to any level of a carcinogen has been considered to have a finite risk of inducing cancer. In other words, there is no threshold for carcinogenicity. Since risks at low levels of exposure cannot be quantified directly by either animal or epidemiological studies, mathematical models have estimated such risks by extrapolation from high to low doses. This modeling procedure is designed to provide a highly conservative estimate of cancer risks based on the most sensitive species of laboratory animal for extrapolation to humans (i.e., the assumption being that humans are as sensitive as the most sensitive animal species). Therefore, the true risk is not likely to be higher than risks estimated using unit risk factors and is most likely lower, and could even be zero (USEPA, 1986; USEPA, 1996).

An excess lifetime cancer risk of 0.000001 (1×10^{-6} or one-in-one million) is typically used as a screening threshold of significance for potential exposure to carcinogenic substances in air. The excess cancer risk level of 0.000001, which has historically been judged to be an acceptable risk, originates from efforts by the Food and Drug Administration (FDA) to use quantitative risk assessment for regulating carcinogens in food additives in light of the zero tolerance provision of the Delany Amendment (Hutt, 1985). The associated dose, known as a "virtually safe dose" (VSD) has become a standard used by many policy makers and the lay public for evaluating cancer risks. However, a study of regulatory actions pertaining to carcinogens found that an acceptable risk level can often be determined on a case-by-case basis. This analysis of 132 regulatory decisions, found that regulatory action was not taken to control estimated risks below 0.000001, which are called de minimis risks. De minimis risks are historically considered risks of no regulatory concern. Chemical exposures with risks above 0.004 (4×10^{-3} or four-in-ten thousand), called de manifestis risks, were consistently regulated. De manifestis risks are typically risks of regulatory concern. The risks falling between these two extremes were regulated in some cases, but not in others (Travis et al, 1987).

The estimated lifetime cancer risks to the maximally exposed individual located at the LBGF PMI, MEIR, MEIW, and MEIS do not exceed the 0.00001 (10×10^{-6}) significance level for T-BACT sources. These engines are EPA certified Tier 2 units equipped with diesel particulate filters, and are used only for emergency power backup, therefore BACT or T-BACT for DPM is satisfied. The chronic hazard index value is also well below the significance threshold of 1.0. These risk estimates were calculated using assumptions that are highly health conservative. Evaluation of the risks associated with the LBGF emissions should consider that the conservatism in the assumptions and methods used in risk estimation considerably over-state the risks from LBGF emissions. Based on the results of this risk assessment, there are no significant public health impacts anticipated from emissions of toxic pollutant to the air from the LBGF.

Operation Odors

The facility is not expected to produce any contaminants at concentrations that could produce objectionable odors.

Summary of Impacts

The health risk assessment for the LBGF indicates that the maximum cancer risk will be approximately 0.00000256 (versus a significance threshold of 0.00001 or 10 x 10^{-6} with T-BACT) at the PMI to air toxics from LBGF emissions. This risk level is considered to be not significant. Non-cancer chronic effects for all scenarios are well below the chronic hazard index significance value.

Results from an air toxics risk assessment based on emissions modeling indicate that there will be no significant incremental public health risks from the modification and operation of the LBGF. Results from criteria pollutant modeling for routine operations indicate that potential ambient concentrations of NO_2, CO, SO_2, and PM_{10} will not significantly impact air quality. Potential concentrations are below the federal and California standards established to protect public health, including the more sensitive members of the population.

Cumulative Impacts

As of March 2020, the BAAQMD is currently updating the CEQA Cumulative Modeling Impact Guidelines. LBGF will submit, under separate cover, a cumulative impact assessment once the BAAQMD provides the updated procedures.

4.4 BIOLOGICAL RESOURCES

The following discussion is based in part on an Arborist Report prepared for the project by Anderson's Tree Care Specialists, Inc. in October 2019. A copy of the report is attached to this Application as Appendix B.

4.4.1 Environmental Setting

4.4.1.1 *Regulatory Framework*

Federal and State

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA: 16 USC Section 703 et seq.) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the U.S. Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment, which is a violation of the MBTA.

Birds of Prey

Birds of prey, such as owls and hawks, are protected in California under provisions of the state Fish and Game Code, Section 3503.5 (1992), 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 can 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 California Department of Fish and Wildlife (CDFW).[11]

Local

Santa Clara General Plan

The General Plan includes several land use and conservation policies designed to protect biological resources in the City, specifically trees. These policies include the following:

Policy 5.3.1-P10: Provide opportunities for increased landscaping and trees in the community, including requirements for new development to provide street trees and a minimum 2:1 on- or off-site replacement for trees removed as part of the proposal to help increase the urban forest and minimize the heat island effect.

Policy 5.10.1-P4: Protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches in circumference measured from 48 inches above-grade on private and public property as well as in the public right-of-way.

[11] Formerly the California Department of Fish and Game.

4.4.1.2 *Existing Conditions*

The project site is developed with three buildings and an associated surface parking lot. There is existing landscaping along portions of the southern, northern, and western property boundaries, and throughout the parking lot. The adjacent parcels are developed with similarly sized industrial buildings with associated surface parking.

Wildlife habitats in such developed urban areas are low in species diversity. Species that use the habitat on the site are predominantly urban adapted birds, such as rock doves, mourning doves, house sparrows, finches, and starlings.

Special Status Species

Special status plant and wildlife species are not located on the highly urbanized project site, although raptors (birds of prey) could use the trees on the site for nesting or as a roost. Raptors are protected by the Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. Section 703, et seq.).

The project site is in close proximity to the Norman Y. Mineta San José International Airport, which is a known habitat for the burrowing owl. However, there is no habitat present on-site.

Trees

Trees located on the project site are primarily non-native species in varying sizes and levels of health. City policy is to protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size and all other trees over 36 inches in circumference (approximately 11 inches in diameter) as measured from 48 inches above the ground surface. Within the boundaries of the proposed project, there are a total of 474 trees, with varying levels of health. The five most common species are London plane (121 trees), Italian cypress (44), Raywood ash (44), cape myrtle (41), and ornamental cherries (32). Table 4.4-1 below includes the species and number of trees on the site.

Table 4.4-1: Existing Tree Summary				
Common Name	**Species**	**Number of Trees**	**Circumference**	
			35.9 inches or less	**36 inches or more**
London plane	*Platanus x acerifolia*	121	121	0
Italian cypress	*Cupressus sempervirens*	44	44	0
Raywood ash	*Fraxinus angustifolia*	44	44	0
Crape myrtle	*Lagerstroemia indica*	41	41	0
Ornamental cherry	*Prunus sp.*	32	32	0
Evergreen pear	*Pyrus kawakamii*	25	25	0
White birch	*Betula pendula*	19	19	0
Japanese maple	*Acer palmatum*	19	19	0
Red ironbark	*Eucalyptus sideroxylon*	17	0	0
Green ash	*Fraxinus pennsylvanica*	14	14	0
African fern pine	*Afrocarpus gracilior*	14	14	0
Blackwood acacia	*Acacia melanoxylon*	13	13	0
Eastern redbud	*Cercis canadensis*	13	13	0
Callery pear	*Pyrus calleryana*	10	10	0
Hackberry	*Celtis sp.*	9	9	0
Chinese pistache	*Pistacia chinensis*	8	8	0
Purple-leaf plum	*Prunus cerasifera*	6	6	0
Weeping cherry	*Prunus subhirtella 'Pendula'*	5	5	0
Weeping willow	*Salix babylonica*	4	4	0
China doll tree	*Radermachera sinica*	3	3	0
Bay laurel	*Laurus nobilis*	2	2	0
Smoke tree	*Cotinus coggygria*	2	2	0
Pygmy date palm	*Phoenix robelenii*	2	2	0
Peruvian pepper	*Schinus mole*	2	2	0
Unknown	*Unknown*	2	2	0
Holly oak	*Quercus ilex*	1	1	0
Philodendron	*Philodendron sp.*	1	1	0
	Total	473		

The City's Design Guidelines also require that mature trees removed or proposed for removal be replaced on-site, at a minimum, with a 24- or 36-inch box. Other standards may apply in cases where particular planting requirements must be met. This includes providing specimen size material for protected trees and installing appropriately sized trees, such as less than or equal to 15 gallons where there are physical limitations.

4.4.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) 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)?	☐	☒	☐	☐
2) 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?	☐	☐	☒	☐
3) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, impede the use of native wildlife nursery sites?	☐	☐	☐	☒
5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact BIO-1:	The project would not 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 CDFW or USFWS. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

As previously discussed, special status plant and wildlife species are not expected on the developed site. Urban adapted raptors (birds of prey), however, could use the trees on the site for nesting. While burrowing owls are present nearby on the Norman Y. Mineta SJC International Airport, there is no grassland habitat on the subject site, and they are not expected to utilize the site for breeding or foraging. Potential construction impacts to nesting raptors are discussed below.

Potential Construction Impacts to Nesting Birds

If tree-nesting birds, including raptors, were to nest on the site, construction activities associated with the project could result in the abandonment of active nests or direct mortality to these birds. Nesting birds are protected by the California Fish and Game Code 3503, which reads, "It is unlawful to take, posses, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or could otherwise lead to nest abandonment. Nest abandonment and/or loss of reproductive effort caused by disturbance are considered "take" by the CDFW; and, therefore, would constitute a significant impact.

Migratory birds, including nesting raptors, are protected under the Migratory Bird Treaty Act and the California Fish and Game Code Sections 3503, 3503.5, and 2800. Migratory birds, especially raptors, utilize mature trees for nesting and foraging habitat. If any migratory birds were to nest on site, construction of the proposed project may result in a loss of fertile eggs or nestlings or lead to nest abandonment in raptor habitat.

The CDFW defines "taking" as causing abandonment and/or loss of reproductive efforts through disturbance.

Although unlikely at this location, tree removal during the nesting season could impact protected raptors and/or other protected migratory birds. Any loss of fertile bird eggs, or individual nesting birds, or any activities resulting in nest abandonment during construction would constitute a significant impact.

Mitigation Incorporated into the Project Design:

PD BIO-1: The project will incorporate the following measures to reduce impacts to nesting birds.

- If removal of the trees on-site would take place between January and September, a pre-construction survey for nesting raptors shall be conducted by a qualified ornithologist to identify active nesting raptor nests that may be disturbed during project implementation. Between January and April (inclusive) pre-construction surveys shall be conducted no more than 14 days prior to the initiation of construction activities or tree relocation or removal. Between May and August (inclusive), pre-construction surveys shall be conducted no more

than 30 days prior to the initiation of these activities. The surveying ornithologist shall inspect all trees in and immediately adjacent to the construction area to be disturbed by these activities, and the ornithologist shall, in consultation with the State of California, Department of Fish and Wildlife (CDFW), designate a construction-free buffer zone (typically 250 feet) around the nest until the end of the nesting activity.

- The applicant shall submit a report indicating the results of the survey and any designated buffer zones to the satisfaction of the Director of Planning and Inspection prior to the issuance of a tree removal permit by the City Arborist.

With implementation of the above measures, potential impacts from the project on nesting birds and protected raptors would be reduced to a less than significant level. **(Less than Significant with Mitigation Incorporated into the Project Design)**

Impact BIO-2:	The project would not 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. **(Less than Significant Impact)**

Because the site is fully developed, no natural or sensitive habitats are present on the project site. As a result, no substantial impacts to natural plant communities or habitats would occur as a result of the proposed project. **(Less than Significant)**

Impact BIO-3:	The project would not have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. **(No Impact)**

The project is located in a developed industrial area and would not directly affect any federally protected wetlands. **(No Impact)**

Impact BIO-4:	The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. **(No Impact)**

The project is located in a developed industrial area and would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. **(No Impact)**

Impact BIO-5:	The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **(Less than Significant Impact)**

The project proposes to remove a total of 319 trees from the project site, four of which are dead. The remaining 155 trees would be protected and have a high likelihood of survival during and after construction. The City's General Plan (Policy 5.3.1-P10) requires new development to include new street trees and at least 2:1 on or off-site replacement for removal of existing trees. As shown in Figure 2.3-2 the project would plant 638 trees to meet the City's replacement requirement. Because the project would be required to comply with the City's tree replacement policy, the loss of these trees on-site would result in a less than significant impact on trees in the project area. **(Less than Significant Impact)**

Impact BIO-6:	The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. **(No Impact)**

The project site is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, there would be no impact. **(No Impact)**

4.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

The discussion in this section is based in part upon a Cultural Resources Literature Search prepared for the project by Holman & Associates, Inc. in July 2018. A copy of the report will be submitted under separate cover pursuant to a Request for Confidentiality. A copy of letters sent to Native American tribes is attached as Appendix C.

4.5.1 Environmental Setting

Cultural resources are evidence of past human occupation and activity and include both historical and archaeological resources. These resources may be located above ground or underground and have significance in the history, prehistory, architecture, culture of the nation, State of California, or local or tribal communities.

4.5.1.1 *Regulatory Framework*

State

Assembly Bill 52

AB 52, effective July 2015, established a new category of resources for consideration by public agencies called Tribal Cultural Resources (TCRs). AB 52 requires lead agencies to provide notice of projects to tribes that are traditionally and culturally affiliated with the geographic area if they have requested to be notified. Where a project may have a significant impact on a TCR, consultation is required until the parties agree to measures to mitigate or avoid a significant effect on a TCR or until it is concluded that mutual agreement cannot be reached.

Under AB 52, TCRs are defined as follows:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either:
    - Included or determined to be eligible for inclusion in the California Register of Historic Resources, or
    - Included in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).
- A resource determined by the lead agency to be a TCR.

Local

Santa Clara General Plan

General Plan policies related to cultural resources that are applicable to the project include the following.

Policy 5.6.3-P5: In the event that archaeological/paleontological resources are discovered, require that work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist.

Policy 5.6.3-P6: In the event that human remains are discovered, work with the appropriate Native American representative and follow the procedures set forth in the State law.

4.5.1.2 *Existing Conditions*

A records search was completed at the Northwest Information Center of the California Historical Resources Information System (CHRIS) in July 2019. There are no recorded cultural or historic resources on the project site. The site is, however, located within a half mile of two Native American sites. Native American settlements are commonly associated with the abundant food supply in the Santa Clara Valley and they often established settlements near local waterways, especially near confluences with other creeks, and on habitable lands within a half mile from the various Mission locations. Lands adjacent to the Guadalupe River were heavily used by Native Americans. The proposed project site is located approximately one mile east of the San Tomas Aquino Creek, less than 0.4 miles from the second location of Mission Santa Clara and approximately 0.7 miles west of the Guadalupe River near former marshlands where the San Jose Airport was built.
Based on the project's location, there is a moderate to high potential for Native American archaeological deposits or cultural materials within the project area.

Historic-era maps for the project area were examined to identify the potential for archaeological resources that might elaborate on the history of the property and the nearby watercourses. Three nearby resources are recorded. P-43-3529 documents the Santa Clara Public Works Building Maintenance Facility at 815 Comstock, across Central Expressway from the current project area (Supernowicz 2015). Some of the buildings and structures date from the late 1940s through the 1960s with the industrial structures constructed between 1980s and 2005. This facility was recommended as not eligible to the National Register of Historical Resources.

The existing buildings on the site were constructed between in 1983 and 1984, so they do not meet the standards to be considered eligible for the California or National Registers and have not been identified by the City of Santa Clara as architecturally or historically significant. There are no historic structures on or adjacent to the project site that would be impacted by the development of the project.

No Native American tribes have contacted the City pursuant to AB 52 to be notified about projects within the City for the purposes of requesting consultation.

4.5.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?	☐	☐	☐	☒
2) Cause a substantial adverse change in the significance of an archaeological resource as pursuant to CEQA Guidelines Section 15064.5?	☐	☒	☐	☐
3) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
4) 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)?	☐	☐	☒	☐
5) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact CUL-1: The project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. **(No Impact)**

The on-site office buildings are of generic architectural style and were constructed between 1983 and 1984. Due to the ages the buildings, they would not be eligible for the California or National Registers and the structures have not been identified by the City of Santa Clara as architecturally or

historically significant based on the City's Criteria for Local Significance. There are no designated historic structures immediately adjacent to the project site. Therefore, implementation of the proposed project would have no impact on any designated historic resources. **(No Impact)**

Impact CUL-2:	The project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

The site has a moderate to high potential for containing prehistoric archaeological resources near the surface due to previous development activities within the vicinity. Trenching and excavation of the site could damage unrecorded subsurface resources.

Mitigation Incorporated into the Project Design:

PD CUL-1: The project proposes to implement the following measures to ensure the project's impacts to archaeological resources are less than significant:

- A Secretary of the Interior-qualified archaeologist and a Native American cultural resources monitor shall be on site to monitor grading of native soil once all pavement is removed from the project site. The project applicant shall submit the name and qualifications of the selected archaeologist and Native American Monitor to the Director of Community Development prior to the issuance of a grading permit. Preference in selecting Native American monitors shall be given to Native Americans with:

    - Traditional ties to the area being monitored.
    - Knowledge of local historic and prehistoric Native American village sites.
    - Knowledge and understanding of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.
    - Ability to effectively communicate the requirements of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.
    - Ability to work with law enforcement officials and the Native American Heritage Commission to ensure the return of all associated grave goods taken from a Native American grave during excavation.
    - Ability to travel to project sites within traditional tribal territory.
    - Knowledge and understanding of Title 14, California Code of Regulations, Section 15064.5.
    - Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding CEQA mitigation provisions.
    - Ability to read a topographical map and be able to locate site and reburial locations for future inclusions in the Native American Heritage Commission's Sacred Lands Inventory.
    - Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.

- After removal of pavement and prior to grading, the archaeologist shall conduct a pedestrian survey over the exposed soils to determine if any surface archaeological manifestations are present. The archaeologist will monitor full-time all grading and ground disturbing activities in native soils associated with construction of the proposed project. If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent, then a letter report detailing the rationale for making such a reduction and summarizing the monitoring results shall be provided to the Director of Community Development. Department of Recreation 523 forms shall be submitted along with the report for any cultural resources encountered over 50 years old.

- In the event that prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a Secretary of the Interior-qualified archaeologist shall examine the find and record the site, including field notes, measurements, and photography for a Department of Parks and Recreation 523 Primary Record form. The archaeologist shall make a recommendation regarding eligibility for the California Register of Historical Resources, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Director of Community Development has concurred with the recommendations. Within 30 days of the completion of construction or cultural resources monitoring, whichever comes first, a report of findings documenting any cultural resource finds, recommendations, data recovery efforts, and other pertinent information gleaned during cultural resources monitoring shall then be submitted to the Director of Community Development. Once finalized, this report shall be submitted to the Northwest Information Center at Sonoma State University.

- Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program training to all existing and any new employees. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed; and instructions to halt work in the vicinity of any potential cultural resources discovery, and notify the city-approved archaeologist and Native American cultural resources monitor.

With implementation of the measures identified above, the project would not cause a substantial adverse change in the significance of an archaeological resource. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Impact CUL-3:	The project would not disturb any human remains, including those interred outside of dedicated cemeteries. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Although unlikely, trenching and excavation of the site could disturb human remains, should they be encountered on the site.

Mitigation Incorporated into the Project Design:

PD CUL-2: The project proposes to implement the following measure to ensure the project's impacts to human remains are less than significant:

- In the event that human remains are discovered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified 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. All actions taken under this mitigation measure shall comply with Health and Human Safety Code § 7050.5(b).

With implementation of the measure identified above, the project would not result in a significant impact related to the disturbance of human remains. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Impact CUL-4:	The project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k). **(Less than Significant Impact)**

On November 15, 2019, letters (attached as Appendix C) were sent to the following Native American tribes based on the recommendation of the Native American Heritage Commission (NAHC): Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, North Valley Yokuts Tribe, the Ohlone Indian Tribe, Amah Mutsun Tribal Band, Indian Canyon Mutsun Band of Costanoan, and Amah Mutsun Tribal Band of Mission San Juan Bautista. The letters contained information about the LDC and LBGF; an inquiry for any unrecorded Native American cultural resources or other areas of concern within or adjacent to the LBGF site; and a solicitation of comments, questions, or concerns with regard the LDC or LBGF. To date, no responses have been received.

No tribes have requested consultation for projects in the area under AB 52 and there are no known TCRs on-site. A record search at the California Historical Resources Information System Northwest Information Center at Sonoma State University (NWIC) was done for the site and the results showed

no previously recorded archaeological resources have been identified within the project site, and one resource was recorded within a quarter-mile radius of the project area.[12]

While there is the potential for unknown Native American resources or human remains to be in the project area, impacts would be less than significant with implementation of the City's General Plan policies related to discovery of archaeological resources or human remains as well as implementation of PD CUL-1, discussed under Impact CUL-2. **(Less than Significant Impact)**

Impact CUL-5:	The project would not cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. **(Less than Significant Impact)**

As discussed under Impact CUL-4, there are no known TCRs on-site, and the project includes measures to reduce potential impacts to less than significant levels. For this reason, the project would not cause a substantial adverse change in the significance of a TCR that is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. **(Less than Significant Impact)**

[12] Albion Environmental, Inc. *Cultural Resources Assessment of Proposed Construction*. October 2018, filed under a Request for Confidentiality.

4.6 ENERGY

4.6.1 Environmental Setting

4.6.1.1 *Regulatory Framework*

Federal and State

Energy Star and Fuel Efficiency

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

Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard 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 2008, Executive Order S-14-08 was signed into law, requiring retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. In October 2015, Governor Brown signed SB 350 to codify California's climate and clean energy goals. A key provision of SB 350 requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable sources by 2030. SB 100, passed in 2018, requires 100 percent of electricity in California to be provided by 100 percent renewable and carbon-free sources by 2045.

California Building Standards Code

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, and the 2019 Title 24 updates went into effect on January 1, 2020.[13] Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments.[14]

California Green Building Standards Code

CALGreen establishes mandatory green building standards for buildings in California. CALGreen was developed to reduce GHG emissions from buildings, promote environmentally responsible and healthier places to live and work, reduce energy and water consumption, and respond to state environmental directives. The most recent update to CALGreen went into effect on January 1, 2019, and covers five categories: planning and design, energy efficiency, water efficiency and conservation, material and resource efficiency, and indoor environmental quality.

[13] California Building Standards Commission. "Welcome to the California Building Standards Commission." Accessed April 14, 2020. http://www.bsc.ca.gov/.
[14] California Energy Commission (CEC). "2016 Building Energy Efficiency Standards." Accessed April 14, 2020. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency.

Advanced Clean Cars Program

CARB adopted the Advanced Clean Cars program in 2012 in coordination with the EPA and National Highway Traffic Safety Administration. The program combines the control of smog-causing pollutants and GHG emissions into a single coordinated set of requirements for vehicle model years 2015 through 2025. The program promotes development of environmentally superior passenger cars and other vehicles, as well as saving the consumer money through fuel savings.[15]

Local

Santa Clara General Plan

The General Plan includes several energy use and conservation policies designed to protect energy resources in the City. These policies include the following:

Policy 5.10.3-P1: Promote the use of renewable energy resources, conservation and recycling programs.

Policy 5.10.3-P4: Encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities.

Policy 5.10.3-P5: Reduce energy consumption through sustainable construction practices, materials and recycling.

Policy 5.10.3-P6: Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.

5.10.4-P8: Provide incentives for LEED certified, or equivalent development.

4.6.1.2 *Existing Conditions*

Total energy usage in California was approximately 7,881 trillion British thermal units (Btu) in the year 2017, the most recent year for which this data was available. Out of the 50 states, California is ranked second in total energy consumption and 48th in energy consumption per capita. The breakdown by sector was approximately 18 percent (1,415 trillion Btu) for residential uses, 19 percent (1,473 trillion Btu) for commercial uses, 23 percent (1,818 trillion Btu) for industrial uses, and 40 percent (3,175 trillion Btu) for transportation.[16] This energy is primarily supplied in the form of natural gas, petroleum, nuclear electric power, and hydroelectric power.

[15] California Air Resources Board. "The Advanced Clean Cars Program." Accessed April 14, 2020. https://www.arb.ca.gov/msprog/acc/acc.htm.
[16] United States Energy Information Administration. *State Profile and Energy Estimates, 2016.* Accessed April 14, 2020. https://www.eia.gov/state/?sid=CA#tabs-2.

Electricity

Electricity in Santa Clara County in 2018 was consumed primarily by the commercial sector (77 percent), followed by the residential sector consuming 23 percent. In 2018, a total of approximately 16,668 gigawatt hours (GWh) of electricity was consumed in Santa Clara County.[17]

Silicon Valley Power (SVP) is the City of Santa Clara's energy utility and would provide electricity service to the project site. For commercial customers, SVP offers several options for participation in green energy programs, including a carbon-free energy option.[18]

Natural Gas

PG&E provides natural gas services within the City of Santa Clara. In 2018, approximately one percent of California's natural gas supply came from in-state production, while the remaining supply was imported from other western states and Canada.[19] In 2018, residential and commercial customers in California used 34 percent of the state's natural gas, power plants used 35 percent, the industrial sector used 21 percent, and other uses used 10 percent. Transportation accounted for one percent of natural gas use in California. In 2018, Santa Clara County used approximately 3.5 percent of the state's total consumption of natural gas.[20]

Fuel for Motor Vehicles

In 2018, 15.5 billion gallons of gasoline were sold in California.[21] The average fuel economy for light-duty vehicles (autos, pickups, vans, and sport utility vehicles) in the United States has steadily increased from about 13.1 miles per gallon (mpg) in the mid-1970s to 24.9 mpg in 2018.[22] 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 miles per gallon by the year 2020, was subsequently revised to apply to cars and light trucks model years 2020 through 2035. [23,24]

[17] California Energy Commission. Energy Consumption Data Management System. "Electricity Consumption by County." Accessed August 16, 2019. http://ecdms.energy.ca.gov/elecbycounty.aspx.
[18] Silicon Valley Power. "Did you Know." Accessed August 16, 2019. http://www.siliconvalleypower.com/.
[19] California Gas and Electric Utilities. 2019 *California Gas Report.* Accessed August 27, 2019. https://www.socalgas.com/regulatory/documents/cgr/2019_CGR_Supplement_7-1-19.pdf.
[20] California Energy Commission. "Natural Gas Consumption by County." Accessed April 14, 2020. http://ecdms.energy.ca.gov/gasbycounty.aspx.
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4.6.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?	☐	☐	☒	☐
2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact EN-1: The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation. **(Less than Significant Impact)**

Construction

Construction of the project would require energy for the demolition of existing buildings, manufacture and transportation of building materials, site preparation and grading, and the actual construction of the buildings and infrastructure. As discussed in Section 4.3 Air Quality, the project would implement measures to minimize the idling of construction equipment. Additionally, the project would participate in the City's Construction and Demolition Debris Recycling Program by recycling or diverting at least 50 percent of materials generated for discards by the project in order to reduce the amount of demolition and construction waste going to the landfill. Diversion saves energy by reusing and recycling materials for other uses (instead of landfilling materials and using additional non-renewable resources).

Operation

Operation of the LDC would consume energy for multiple purposes including, but not limited to, building heating and cooling, lighting, appliances and electronics. Energy would also be consumed during each vehicle trip generated by employees and visitors. The LDC would be built in accordance with Title 24 and CALGreen and include green building measures to reduce energy consumption. The LDC would also utilize lighting control to reduce energy usage for new exterior lighting and air economization for building cooling. Water efficient landscaping and ultra-low flow plumbing fixtures in the building would be implemented to limit water consumption. The LDC would be designed to achieve a minimum of LEED Silver certification. Due to the energy efficiency measures incorporated into the facility, the LDC would not result in a wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources.

Energy would be consumed by the LBGF during regular testing and maintenance of the 45 emergency backup generators. Each generator would be limited to a maximum of 50 hours per year of operation. Assuming a worst-case scenario where all generators are tested at full load for the full 50 hours per year, the LBGF would consume up to 459,010 gallons of fuel per year. According to the California Energy Commission's 2019 Weekly Fuel's Watch Report, the annual capacity of CARB Diesel Fuel in California was 1,736,000 barrels annually.[25] The proposed consumption of CARB Diesel Fuel by the LBGF is less than 0.0063 percent of the total California capacity. Because the generators would only be operated when necessary for testing and maintenance, and would not be used regularly for electricity generation, the LBGF would not result in a wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. Additionally, the LBGF would not have a significant adverse effect on local or regional energy supplies and will not create a significant adverse impact on California's energy resources. **(Less than Significant Impact)**

Impact EN-2:	The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **(Less than Significant Impact)**

The project would be consistent with the regulations described in 4.6.1.1 (including General Plan Policies) by:

- Complying with Title 24 and CalGreen,
- Participating in the City's Construction and Demolition Debris Recycling Program
- Implementing TDM measures to promote walking, bicycling and transit use.
- Incorporating measures such as lighting control, air economization, water conservation measures, and energy conservation measures.

The project would, therefore, not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **(Less than Significant Impact)**

[25] Addition of the total weekly Production Capacity and total weekly Refinery Stock reported for June 14, 2019.

4.7 GEOLOGY AND SOILS

The following discussion is based on a Phase I Environmental Site Assessment (June 2018) prepared by ATC Group Services LLC. The report is attached as Appendix D of this Application.

4.7.1 Environmental Setting

4.7.1.1 *Regulatory Framework*

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed following the 1971 San Fernando earthquake. The act regulates development in California near known active faults due to hazards associated with surface fault ruptures. Alquist-Priolo maps are distributed to affected cities, counties, and state agencies for their use in planning and controlling new construction. Areas within an Alquist-Priolo Earthquake Fault Zone require special studies to evaluate the potential for surface rupture to ensure that no structures intended for human occupancy are constructed across an active fault.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was passed in 1990 following the 1989 Loma Prieta earthquake. The SHMA directs the California Geological Survey (CGS) to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. CGS has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, landslides, and ground shaking, including the central San Francisco Bay Area. The SHMA requires that agencies only approve projects in seismic hazard zones following site-specific geotechnical investigations to determine if the seismic hazard is present and identify measures to reduce earthquake-related hazards.

California Building Standards Code

The California Building Standards Code (CBC) prescribes standards for constructing safer buildings. The CBC contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, ground strength, and distance to seismic sources. The CBC requires that a site-specific geotechnical investigation report be prepared for most development projects to evaluate seismic and geologic conditions, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. The CBC is updated every three years; the current version is the 2016 CBC.

California Division of Occupational Safety and Health Regulations

Excavation, shoring, and trenching activities during construction are subject to occupational safety standards for stabilization by the California Division of Occupational Safety and Health (Cal/OSHA) under Title 8 of the California Code of Regulations and Excavation Rules. These regulations minimize the potential for instability and collapse that could injure construction workers on the site.

Paleontological Resources Regulations

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They range from mammoth and dinosaur bones to impressions of ancient animals and plants, trace remains, and microfossils. These are valued for the information they yield about the history of the earth and its past ecological settings. The California Public Resources Code (Section 5097.5) specifies that unauthorized removal of a paleontological resource is a misdemeanor. Under the CEQA Guidelines, a project would have a significant impact on paleontological resources if it would disturb or destroy a unique paleontological resource or site or unique geologic feature. Paleontological resources are fossils, the remains or traces of prehistoric life preserved in the geologic record. They range from the well-known and well publicized (such as mammoth and dinosaur bones) to scientifically important fossils.

Local

Santa Clara General Plan

General Plan policies geology and soils-related policies applicable to the project include the following.

Policy 5.6.3-P1: Require that new development avoid or reduce potential impacts to archaeological, paleontological and cultural resources.

Policy 5.6.3-P4: Require that a qualified paleontologist/archaeologist monitor all grading and/or excavation if there is a potential to affect archeological or paleontological resources, including sites within 500 feet of natural water courses and the Old Quad neighborhood.

Policy 5.6.3-P5: In the event that archeological/paleontological resources are discovered, require that work be suspended until the significance of the find and recommended actions are determined by a qualified archeologist/paleontologist.

Policy 5.10.5-P5: Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.

Policy 5.10.5-P6: Require that new development is designed to meet current safety standards and implement appropriate building codes to reduce risks associated with geologic conditions.

Policy 5.10.5-P7: Implement all recommendations and design solutions identified in project soils reports to reduce potential adverse effects associated with unstable soils or seismic hazards.

Santa Clara City Code

Title 15 of the Santa Clara City Code includes the City's adopted Building and Construction Code. These regulations are based on the CBC and include requirements for building foundations, walls, and seismic resistant design. Requirements for grading and excavation permits and erosion control are included in Chapter 15.15 Building Code. Requirements for building safety and earthquake reduction hazard are addressed in Chapter 15.55 Seismic Hazard Identification.

4.7.1.2 *Existing Conditions*

The project site is located in the Santa Clara Valley, a relatively flat alluvial basin, bounded by the Santa Cruz Mountains to the southwest and west, the Diablo Mountain Range to the east, and the San Francisco Bay to the north.

Soil Conditions

The project site is located on unconsolidated sediments approximately 500 feet thick and consists primarily of estuarine deposits of the Alameda Formation and younger alluvial fans. It is mostly underlain extensively by the Mud Member that contains a high clay content and forms an extensive east-west aquitard across the area. This unit averages 25 to 50 feet thick with gravel and sand layers commonly encountered in the middle of the unit. The Mud Member has been identified as an ideal case for less aggressive groundwater remediation as it serves to retard vertical groundwater migration. Deeper geological units beneath the site consist of a sequence of alluvial fan deposits interbedded between older muds (refer to Appendix D-2).

Because the topography of the project area is flat, with an elevation of approximately 40 feet above sea level, erosion hazards are limited and there are no landslide hazards.

Groundwater

Based on soil borings completed for the Limited Phase II ESA (refer to Appendix D-2), depth to groundwater in the area is approximately 16 to 24 feet below ground surface (bgs). Fluctuations in groundwater levels are common due to seasonal fluctuations, underground drainage patterns, regional fluctuations, and other factors.

Seismicity and Seismic Hazards

The San Francisco Bay Area is one of the most seismically active areas in the United States. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities estimates there is a 72 percent chance of at least one magnitude 6.7 earthquake occurring in the Bay Area region between 2002 and 2032. Higher levels of shaking and damage would be expected for earthquakes occurring at closer distances. The faults considered capable of generating significant earthquakes in the area are generally associated with the well-defined areas of crustal movement, which trend northwesterly.

The three major faults in the region are the Calaveras Fault (approximately 9.4 miles east of the site), the San Andreas Fault (approximately 11.3 miles west of the site), and the Hayward Fault (approximately 6.1 miles east of the site). The project site is not located within a fault rupture zone.[26]

Ground shaking at the project site is predicted to be strong to very strong as determined by the Association of Bay Area Governments (ABAG). The project site is not located within the limits of an

[26] Santa Clara County. *Santa Clara County Geologic Hazard Zones.* October 26, 2012.

Alquist-Priolo Earthquake Fault Zone and there are no known active faults within the City limits of Santa Clara.

Liquefaction

Soil liquefaction is a condition where saturated granular soils near the ground surface undergo a substantial loss of strength during seismic events. Loose, water-saturated soils are transformed from a solid to a liquid state during ground shaking. Liquefaction can result in significant deformations and ground rupture or sand boils. Soils most susceptible to liquefaction are loose, uniformly graded, saturated, fine-grained sands that lie close to the ground surface. The project site is located within a State-designated Liquefaction Hazard Zone and a Santa Clara County Liquefaction Hazard Zone.[27]

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 face, such as the steep bank of a stream channel.

There are no stream channels on or adjacent to the site, therefore the project site would not be subject to lateral spreading.

Paleontological Resources

The City of Santa Clara is situated on alluvial fan deposits of the Holocene age. These relatively young sediments have low potential to yield fossil resources or to contain significant nonrenewable paleontological resources. However, these recent sediments overlie sediments of older Pleistocene sediments with high potential to contain paleontological resources. These older sediments, often found at depths of ten feet or more below the ground surface, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates. Ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources in older Pleistocene sediments. [28]

[27] CA Department of Conservation. *CGS Seismic Hazard Zone and Liquefaction Map. Santa Clara County*. 2012
[28] City of Santa Clara. City of Santa Clara Draft 2010-2035 General Plan. January 2011. Page 328.

4.7.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Directly or indirectly cause 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?	☐	☐	☒	☐
– Landslides?	☐	☐	☒	☐
2) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
3) Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
4) Be located on expansive soil, as defined in the current California Building Code, creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
5) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
6) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☒	☐	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact GEO-1:	The project would not directly or indirectly cause 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; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

As discussed in Section 4.7.1.2, there are no known active or potentially active faults crossing the project site. The site is not located within an Earthquake Fault Zone as defined by the State of California Alquist-Priolo Earthquake Fault Zoning Act. The project site is not located within a fault rupture zone.

The project site is located in a seismically active region. Geologic conditions on the site would require the new building be designed and constructed in accordance with standard engineering techniques and current California Building Code requirements, to avoid or minimize potential damage from seismic shaking and liquefaction on the site.

The project site is located in a mapped liquefaction hazard zone. The site is not located within a landslide hazard zone. The following standard City of Santa Clara permit condition would be implemented.

Mitigation Incorporated into the Project Design:

PD GEO-1: In order to ensure the project design conforms to the requirements of a final geotechnical engineering investigation and California and local building standards and codes, the following is proposed as mitigation incorporated into the project. Incorporation will ensure seismic hazards are reduced to less than significant levels.

- To avoid or minimize potential damage from seismic shaking, the project would be built using standard engineering and seismic safety design techniques. Building redevelopment design and construction at the site shall be completed in conformance with the recommendations of a design-level geotechnical investigation, which will be included in a report to the City. The report shall be reviewed and approved by the City of Santa Clara's Building Division as part of the building permit review and issuance process. The building shall meet the requirements of applicable Building and Fire Codes, including the 2016 California Building Code, as adopted or updated by the City. The project shall be designed to withstand potential geologic hazards identified on the site and the project shall be designed to reduce the risk to life or property to the extent feasible and in compliance with the Building Code.

With implementation of the identified mitigation measures, project impacts would be reduced to a less than significant level. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Impact GEO-2:	The project would not result in substantial erosion or the loss of topsoil. **(Less than Significant Impact)**

Ground disturbance at the site would be required for demolition and on-site improvements. Ground disturbance would expose soils and increase the potential for wind or water related erosion and sedimentation at the site until construction is complete. Compliance with the erosion control measures, as required by the National Pollutant Discharge Elimination System (NPDES) is the primary means of enforcing erosion control measures through the grading and building permit process. In accordance with General Plan policies, construction activities would be subject to the requirements of the regulatory programs and policies in place and, therefore, would have a less than significant soil erosion impact.

With respect to the LBGF facility components, construction will involve limited ground disturbance as the site grading for the LDC will be completed prior to installation of the LBGF components. The only ground disturbance directly attributable to the LBGF will be the minor trenching for electrical interconnection to the LDC. **(Less than Significant Impact)**

Impact GEO-3:	The project would not 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. **(Less than Significant Impact)**

The project site is located in a mapped liquefaction hazard zone. The site is not located within a landslide hazard zone. Compliance with the Standard Permit Condition discussed under Impact GEO-1 would avoid or reduce impacts related to the stability of soil on-site. The project 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)**

Impact GEO-4:	Although the project is located on expansive soil, as defined in the current California Building Code, the project would not create substantial direct or indirect risks to life or property. **(Less than Significant Impact)**

The project site is located on expansive soil as defined in Section 1803.5.3 of the CBC. The project would be required to adhere to the SHMA and CBC, which would reduce impacts related to expansive soils to a less than significant level. The policies of the City of Santa Clara 2010-2035 General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Santa Clara General Plan Policy 5.10.5-P6 requires that new development be designed to meet current safety standards and implement appropriate building codes to reduce risk associated with geologic conditions. **(Less than Significant Impact)**

Impact GEO-5:	The project would not 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. **(No Impact)**

The project site is located within an urban area of Santa Clara where sewers are available to dispose wastewater from the project site. Therefore, the project site would not need to support septic tanks or alternative wastewater disposal systems. **(No Impact)**

Impact GEO-6:	The project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

There are no known unique paleontological resources or unique geological features within the City. However, ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources. The LDC would require excavation to depths of up to 13 feet. Foundations will be augered piles. Although unlikely, paleontological resources could be encountered during construction of the LDC.

Mitigation Incorporated into the Design of the Project:

PD GEO-2: The project proposes to implement the following measures to as best management practices to ensure impacts to paleontological resources are less than significant.

- Prior to the start of any subsurface excavations that would extend beyond previously disturbed soils, all construction forepersons and field supervisors shall receive training by a qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology, who is experienced in teaching non- specialists, to ensure they can recognize fossil materials and shall follow proper notification procedures in the event any are uncovered during construction. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who shall evaluate its significance.

- If a fossil is found and determined by the qualified paleontologist to be significant and avoidance is not feasible, the paleontologist shall develop and implement an excavation and salvage plan in accordance with Society of Vertebrate Paleontology standards. Construction work in these areas shall be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall then be deposited in a scientific institution with paleontological collections. A final Paleontological Mitigation Plan Report shall be prepared that outlines the results of the mitigation program. The Director of Planning and Inspection shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

Although the LDC site will be graded and any excavation for deep foundations would be completed prior to installation of any of the LBGF facilities, the LBGF would perform trenching to install the underground cabling for the electrical interconnection between each generator yard and the LDC building it serves. This trenching is most likely to occur in previously disturbed soils shallower than 10 feet. In the unlikely event the trenching activities encounter potential paleontological resources, implementation of the above measure would ensure that any potential impacts from the trenching activities for the LBGF would be reduced to less than significant levels. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

4.8 GREENHOUSE GAS EMISSIONS

This section is based in part on an Air Quality and Greenhouse Gas Emissions study completed by Atmospheric Dynamics, Inc. The report is attached as Appendix A.

4.8.1 Environmental Setting

4.8.1.1 *Background Information*

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e). The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2 and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents, but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and SF_6 emissions are commonly created by industries such as aluminum production and semiconductor manufacturing.

An expanding body of scientific research supports the theory that global climate change is currently causing changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

4.8.1.2 *Regulatory Framework*

State

Assembly Bill 32

Under the California Global Warming Solutions Act, also known as AB 32, CARB established a statewide GHG emissions cap for 2020, adopted mandatory reporting rules for significant sources of

GHGs, and adopted a comprehensive plan, known as the Climate Change Scoping Plan, identifying how emission reductions would be achieved from significant GHG sources.

In 2016, SB 32 was signed into law, amending the California Global Warming Solution Act. SB 32, and accompanying Executive Order B-30-15, require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of CO_2E ($MMTCO_2e$). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 $MMTCO_2e$.

Senate Bill 375

SB 375, known as the Sustainable Communities Strategy and Climate Protection Act, was signed into law in September 2008. SB 375 builds upon AB 32 by requiring CARB to develop regional GHG reduction targets for automobile and light truck sectors for 2020 and 2035. The per-capita GHG emissions 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.

Consistent with the requirements of SB 375, the Metropolitan Transportation Commission (MTC) partnered with the Association of Bay Area Governments (ABAG), BAAQMD, and the Bay Conservation and Development Commission to prepare the region's Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan process. The SCS is referred to as Plan Bay Area 2040. Plan Bay Area 2040 establishes a course for reducing per-capita GHG emissions through the promotion of compact, high-density, mixed-use neighborhoods near transit, particularly within identified Priority Development Areas (PDAs).

Regional and Local

2017 Clean Air Plan

To protect the climate, the 2017 CAP (prepared by BAAQMD) includes control measures designed to reduce emissions of methane and other super-GHGs that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. The jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing GHG impacts developed by BAAQMD within the CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

Other Implementing Laws and Regulations

There are a number of 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 Santa Clara 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 City's General Plan as a part of the City's development permitting and other programs provides for meeting building standards for energy efficiency, recycling, and water conservation, consistent with the laws and regulations designed to reduce GHG emissions.

Local

City of Santa Clara General Plan

The Santa Clara 2010-2035 General Plan includes policies that address the reduction of GHG gas emissions during the planning horizon of the General Plan. Goals and policies that address sustainability (see Appendix 8.13: Sustainability Goals and Policies Matrix in the General Plan) are aimed at reducing the City's contribution to GHG emissions. As described below, the development of a comprehensive GHG emissions reduction strategy for the City is also included in the General Plan.

5.3.1-P10: Provide opportunities for increased landscaping and trees in the community, including requirements for new development to provide street trees and a minimum 2:1 on- or off-site replacement for trees removed as part of the proposal to help increase the urban forest and minimize the heat island effect.

5.3.1-P14: Encourage TDM strategies and the provision of bicycle and pedestrian amenities in all new development greater than 25 housing units or more than 10,000 non-residential square feet, and for City employees, in order to decrease use of the single-occupant automobile and reduce vehicle miles traveled, consistent with the Climate Action Plan.

5.8.5-P1: Require new development and City employees to implement TDM programs that can include site-design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage and recreational facilities.

5.8.5-P5: Encourage TDM programs that provide incentives for the use of alternative travel modes to reduce the use of single-occupant vehicles.

5.4.1-P15: Work with Valley Transportation Authority to improve transit access, information and frequency along El Camino Real, including the implementation of a Bus Rapid Transit or similar transit service near Regional Mixed-Use areas.

Climate Action Plan

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

A key reduction measure that is being undertaken by the City of Santa Clara under the Climate Action Plan is in the *Coal-Free and Large Renewables* focus area. The City of Santa Clara operates Silicon Valley Power (SVP), a publicly owned utility that provides electricity for the community of Santa Clara, including the project site. Data centers constitute a large portion of the electricity used in the City of Santa Clara; about 28 percent on average. Since nearly half (48 percent) of Santa Clara's GHG emissions result from electricity use, removing GHG-intensive sources of electricity generation (such as coal) is a major focus area in the Climate Action Plan for achieving the City's GHG reduction goals.

CEQA clearance for all discretionary development proposals are required to address the consistency of individual projects with reduction measures in the Climate Action Plan and goals and policies in the General Plan designed to reduce GHG emissions. Compliance with appropriate measures in the Climate Action Plan would ensure an individual project's consistency with an adopted GHG reduction plan.

In December 2018, SVP published an updated Strategic Plan that outlines goals and actions for achieving 2030 GHG emission reductions consistent with the legislation described above. All electricity from SVP has been coal-free since January 2018. Beginning in December 2018, SVP underwent a six-month process to update its Integrated Resource Plan to lay out needed steps to meet the 50 percent Renewable Portfolio Standard set by SB 32. SVP plans to exceed the 50 percent target.

4.8.1.3 *Existing Conditions*

Unlike emissions of criteria and toxic air pollutants, which have regional and local impacts, emissions of GHGs have a broader, global impact. Global warming is a process whereby GHGs accumulating in the upper atmosphere contribute to an increase in the temperature of the earth and changes in weather patterns.

The project site is currently developed with two two-story office buildings, a data center building and associated paved parking and loading dock areas. The existing data center building is a separate, standalone project that would not be associated with the proposed project. The main source of GHG

emissions associated with the existing uses on-site is the electricity use of the existing building. Additional emissions also result from vehicle trips associated with the building's daily operations.

4.8.2 Checklist and Discussion of Impacts

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

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

GHG emissions worldwide contribute, on a cumulative basis, 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 Santa Clara, the entire state of California, and 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 GHG emissions in a plan for the reduction of GHG emissions that has been adopted in a public process following environmental review. The City of Santa Clara adopted its CAP (a GHG reduction strategy) in 2013 in conformance with its most recent General Plan Update. The City's projected emissions and the CAP are consistent with measures necessary to meet statewide 2020 goals established by AB 32 and addressed in the Climate Change Scoping Plan. For projects that would be operational by the end of 2020, the threshold of significance for whether a development project in the City of Santa Clara would generate GHG emissions that would have a significant impact on the environment therefore would be whether or not the project conforms to the applicable reduction measures in the City's CAP. Because the project would not become operational prior to the end of 2020, consistency with the CAP cannot be used to determine significance under CEQA. The project, however, would still be required to be consistent with the requirements of the CAP, and implementation of required CAP measures would reduce GHG emissions from the project. The City is embarking on a process to update the CAP to reflect 2030 GHG reduction targets in SB 32, but that process is ongoing and would not precede the subject project application.

Per BAAQMD guidance for stationary-source projects such as the LBGF, the threshold to determine the significance of an impact from GHG emissions is 10,000 metric tons of CO_2e per year. This threshold is consistent with stationary source thresholds adopted by other air quality management districts throughout the state and is intended to capture 95 percent of all GHG emissions from new

permit applications from stationary sources in the San Francisco Bay Area Basin. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require a BAAQMD permit to operate. The standby generators included as part of the project would be permitted sources, and as such, the BAAQMD's 10,000 metric tons of CO_2e per year threshold is appropriate for analyzing the significance of emissions produced by the generators. If annual emissions of operational-related GHGs exceed these levels, the LBGF would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change. Emissions from mobile sources and area sources, such as electricity use and water delivery, associated with LDC operation would not be included for comparison to this threshold, based on guidance in the BAAQMD's CEQA Guidelines. GHG impacts from the LDC would be considered to have a less than significant impact if the LDC is consistent with applicable regulatory programs and policies adopted by CARB or other California agencies.

Impact GHG-1:	The project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. (**Less Than Significant Impact)**

Overview of GHG Emissions

GHG emissions from the proposed project would consist of emissions from vehicle trips to and from the building and emissions related to the generation of electricity used in the data center building. Data centers are an energy-intensive land use, requiring more electricity than other types of development. The primary function of the data center is to house computer servers, which require electricity and cooling 24 hours a day to operate.

Silicon Valley Power Electricity Generation

Electricity for the data center facility is provided by SVP, which is the public electric utility of the City of Santa Clara. Santa Clara currently has ownership interest, or has purchase agreements for 1,079.15 megawatt (MW) of electricity.[29] In 2018, approximately 31 percent of that generation is eligible as renewable (as defined by the California Energy Commission) and an additional 11 percent is otherwise a non-GHG emitting resource (i.e. large-hydroelectric).[30] This capacity far exceeds City of Santa Clara's current peak electricity demand of approximately 526.2 MW. No new generation peak capacity is necessary to meet the capacity requirements of new construction, or redeveloped facilities within the City to meet the near or projected future demand.

The City of Santa Clara follows the State's preferred loading order in procuring new energy resources. First, the current load (customer) is encouraged to participate in energy efficiency programs to reduce their usage, thus freeing up existing resources (and any related emissions) for the new load (electricity demand). In addition, the City of Santa Clara encourages the use of renewable resources and clean distributed generation, and has seen a significant increase in its applications for large and small rooftop photovoltaics (PV). Demand displaced by customer-based renewable projects is also available to meet new load requests.

[29] Silicon Valley Power, City of Santa Clara. The Silicon Valley Power Resources Map. Accessed: April 9, 2020. Available at: http://www.siliconvalleypower.com/home/showdocument?id=5763.
[30] Silicon Valley Power. "Power Content Label". Accessed: April 9, 2020. Available at: http://siliconvalleypower.com/svp-and-community/about-svp/power-content-label

The City of Santa Clara seeks to meet its Renewable Portfolio Standard (RPS) through the addition of new renewable resources. In order to meet anticipated increases in energy needs (as separate from peak generation capacity requirements) the City of Santa Clara has contracted for additional wind energy including the Big Horn II Wind Project that would provide the City of Santa Clara up to an additional 17.5 MW of GHG-emission-free electricity.

SVP has a lower emission rate than the statewide California power mix because it utilizes a much higher portion of renewable sources. A comparison of SVP's and the statewide power mix is shown in Table 4.8-1.

Table 4.8-1: Comparison of SVP And Statewide Power Mix

Energy Resources	2018 SVP Power Mix	2018 CA Power Mix (For Comparison)
Eligible Renewables (Biomass & Waste, Geothermal, Eligible Hydro, Solar, Wind)	28%	31%
Coal	0%	3%
Large Hydro	16.5%	11%
Natural Gas	8.5%	35%
Nuclear	0%	9%
Other	41.25%	<1%
Unspecified Source of Power (Not Traceable to Specific Sources)	5.75%	11%
Total	**100.0%**	**100.0%**

It is important to note that SVP's carbon intensity factor for electricity generation would continue to change as SVP's power mix continues to reduce the percentage of electricity produced by coal-fired power plants and increase the use of renewable resources. As noted above, the City of Santa Clara and SVP have committed to be coal-free and increase large renewables power generation as a part of the City's Climate Action Plan.

Proposed Efficiency Measures

Overview: Power Usage Effectiveness During 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, means that the data center or laboratory must draw two watts of electricity for every one 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 theoretically ideal PUE is one where all power drawn by the facility goes to the IT infrastructure. The theoretical ideal PUE is unachievable since power must be drawn to cool the IT infrastructure and provide ancillary services to the building.

The theoretical peak PUE for the Worst Day Calculation would be 1.50 (Total 99.0 MW demand of Building on Worst Case Day divided by 66.0 MW Total Critical IT Load). The annual PUE would be

1.42 (Total 93.8 MW demand of Building average conditions divided by 66.0 MW Design Critical IT Load). These PUE estimates are based on design assumptions and represent worst case.

Digital Realty has experienced and expects PUE to be much lower because the Critical IT that is leased by clients is rarely fully utilized. Digital Realty's experience with operation of other data centers is that the actual PUE will be closer to 1.30.

Energy and Water Use Efficiency Measures in Building Design

Due to the heat generated by the data center equipment, cooling is one of the main uses of electricity in data center operations. In order to reduce GHG emissions and reduce the use of energy related to building operations, the project proposes to implement the following efficiency measures:

- LEED Silver certification
- Dedicated roof space for future solar
- Daylight penetration to offices
- Reflective roof surface
- Meet or exceed Title 24 requirements
- Electric vehicle (EV) parking
- Low flow plumbing fixtures
- Landscaping would meet City of Santa Clara requirements for low water use

Construction-Related Emissions

GHG emissions associated with construction were computed to be 762 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City of Santa Clara nor BAAQMD have a threshold for construction emissions. These emissions would be temporary in nature and would be less than the indirect emissions associated with operation of the proposed uses. Construction emissions would occur during building construction, trenching and minor paving and landscape installation.

As a Best Management Practice (BMP), the project would participate in the City's Construction and Demolition Debris Recycling Program by recycling or diverting at least 50 percent of materials generated for discards by the project in order to reduce the amount of demolition and construction waste going to the landfill.

LBGF Stationary Equipment Emissions from Routine Testing

The consumption of diesel fuel to test generators at the LBGF would result in direct CO_2 emissions. On an annual basis, the project's total operational emissions related to emergency backup generator maintenance and testing use would be approximately 5,000 metric tons of CO_2e per year. See Appendix AQ1 for the GHG emission calculation data. This is well below the BAAQMD threshold for stationary sources of 10,000 metric tons per year of CO_2e for stationary sources.

LDC Operational Emissions

SVP's carbon intensity factor for 2019 was determined to be 341 pounds of CO_2e per MWh.[31] SVP's carbon intensity factor for electricity generation will continue to change as SVP's power mix continues to reduce the percentage of electricity produced by coal-fired power plants and increase the use of renewable resources. As noted above, the City and SVP have committed to be coal-free and increased large renewables power generation as a part of the City's CAP.

Project Electricity Usage

Data centers are an energy-intensive land use, requiring more electricity than other types of development. The primary function of the data center is to house computer servers, which require electricity and cooling 24 hours a day to operate. The projected maximum demand for the LDC is 99 MW. On an annual basis, the LDC would consume up to the maximum electrical usage of 867,240 MWh per year. The LDC's annual GHG emissions related to electricity use would be about 13 percent less per year by using SVP's power mix than if the California statewide average power mix was used.

Project Mobile Emission Sources

Using standard trip generation rates for data centers published by the Institute of Transportation Engineers (ITE, Land Use Code 160), the LDC could generate up to 570 daily vehicle trips. This represents a conservative estimate as it does not account for the elimination of existing vehicle trips associated with the project site.

Project Water Consumption and Waste Generation

Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. Indoor uses at the project site would generate a potable water demand of approximately 67 acre-feet per year.

GHG emissions generated by the LDC are summarized in Table 4.8-2.

[31] Kathleen Hughes, City of Santa Clara. Personal Communication. February 6, 2019.

Table 4.8-2: LDC GHG Emissions	
Source	**Annual Emissions (Metric Tons of CO_2e)**
Energy Use[1]	134,140
Mobile Sources[2]	585
Area Sources[3]	816
Water Use[4]	53
Waste Generation[5]	359
Total	**172,331**

Notes:
[1] Based on 2017 SVP carbon intensity factor of 430 pounds of CO_2e per MWh.
[2] Based on ITE trip rates for Data Center (Land Use Code 160) applied to a 576,120 square foot data center.
[3] Based on CalEEMod default emission factors for General Light Industrial land uses applied to a 576,120 square foot data center. The total includes natural gas emissions, which are conservatively assumed to apply to all 576,120 square feet of the building, even though the data halls will not require natural gas.
[4] CalEEMod default emissions adjusted to reflect the maximum project water demand of 67 acre-feet per year.
[5] Based on CalEEMod default emission factors for General Light Industrial land uses applied to a 576,120 square foot data center.

As shown in Table 4.8-2, the primary source of GHG emissions from the LDC is energy use. As described above, electricity to the LDC would be provided by SVP. To reduce GHG emissions and the use of energy related to building operations, the LDC includes a variety of energy efficiency measures, as described above. The LDC would comply with all applicable City and state green building measures, including Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, based on the 2016 Energy Efficiency Standards requirements, and the 2016 California Green Building Standards Code, commonly referred to as CALGreen (California Code of Regulations, Part 11).

The City of Santa Clara is currently preparing the 2030 Climate Action Plan, which would include strategies for meeting the GHG emission reduction targets required by SB 32, and would identify further actions the City can undertake to further reduce GHG emissions. As a result of the 2030 CAP, SVP requirements would be updated to meet SB 32 targets. Because the LDC would receive electricity from a utility on track to meet the SB 32 2030 GHG emission reduction target, would result in lower emissions than the statewide average for an equivalent facility (roughly 13 percent) due to SVP's power mix, would include energy efficiency measures to reduce emissions to the extent feasible, and would be consistent with applicable plans and policies adopted to reduce GHG emissions, the LDC would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. **(Less than Significant Impact)**

Impact GHG-2:	The project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. **(Less Than Significant Impact)**

Santa Clara Climate Action Plan

As described previously, the City of Santa Clara Climate Action Plan (CAP) was adopted in December 2013, and the City is currently preparing the 2030 CAP, which would include strategies for meeting the GHG emission reduction targets required by SB 32 and identify further actions the City can undertake to further reduce GHG emissions and meet new targets.

The 2013 CAP, which is part of the City's General Plan, identifies a series of GHG emissions reduction measures to be implemented by development projects that would allow the City to achieve its GHG reduction goals. The measures center around seven focus areas: coal-free and large renewables, energy efficiency, water conservation, waste reduction, off-road equipment, transportation and land use, and urban heat island effect.

The CAP includes measures applicable to City government, existing development and new development projects in Santa Clara. The project's conformance with applicable reduction measures for new development in the CAP are discussed below.

Energy Efficiency Measures

Measure 2.3 Data Centers calls for completion of a feasibility study of energy efficient practices for new data center projects with an average rack power rating[32] of 15 kilowatts or more to achieve a power usage effectiveness (PUE) of 1.2 or lower.

The average rack power rating for the LDC is estimated at four kW, which is significantly below the threshold to trigger a formal feasibility study of energy efficient practices. The annual average PUE of the proposed data center would be 1.5 if the building was fully leased and every client utilized its full capacity. Digital Realty has found that clients do not utilize the full capacity of what they lease and therefore expects the actual PUE to on the order of 1.30 or lower, which is slightly above Measure 2.3's goal of a PUE of 1.2 or lower.

Water Conservation Measures *Measure 3.1 Water Conservation* calls for a reduction in per capita water use to meet Urban Water Management targets by 2020. Development standards for water conservation would be applied to increase efficiency in indoor and outdoor water use areas. Water conservation measures include the use of:

- recycled or non-potable graywater for landscape irrigation;
- water efficient landscaping with low water usage plant material to minimize irrigation requirements; and
- ultra-low flow toilets and plumbing fixtures in the building.

Waste Reduction Measures

Measure 4.2 Increased Waste Diversion calls for an increase in solid waste diversion rate through recycling efforts, curbside food waste pickup, and construction and demolition waste programs. The project would divert construction and demolition waste during project construction to help the City reach its 80 percent waste diversion rate.

[32] Average rack power rating is a measure of the power available for use on a rack used to store computer servers. The higher the value of kilowatts, the greater power density per rack and generally more energy use per square foot of building area in a data center.

Off-Road Equipment

Measure 5.2 Alternative Construction Fuels requires construction projects to comply with BAAQMD best management practices, including alternative-fueled vehicles and equipment. The project would adopt BAAQMD best management practices, as described 4.3 Air Quality.

Transportation and Land Use

Measure 6.1 Transportation Demand Management Program requires new development located in the City's transportation districts to implement a transportation demand program (TDM) to reduce drive-alone trips. The project site is located within Transportation District 1 – North of Caltrain. Based on Table 9: Minimum Vehicle Miles Traveled Reduction Requirements by Transportation District and Land Use Designation of the Climate Action Plan, the project would be required to have a 25 percent vehicle miles traveled (VMT) reduction, with 10 percent coming from TDM measures. An exception to these reduction requirements is made for projects located on properties with a General Plan designation of Heavy Industrial, such as the project site. Nevertheless, the project would be required to comply with General Plan Policy 5.8.5-P1, which requires new development to implement TDM programs that can include site-design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage and recreational facilities. Additionally, the project would implement 2030 CAP requirements after the CAP is in place.

Applicable General Plan Policies

In addition to the reduction measures in the Climate Action Plan, the City of Santa Clara General Plan has goals and policies to address sustainability (see Appendix 8.13: Sustainability Goals and Policies Matrix in the General Plan) aimed at reducing the City's contribution to GHG emissions. For the proposed project, implementation of policies that increase energy efficiency or reduce energy use would effectively reduce indirect GHG emissions associated with energy generation. The consistency of the proposed project with the Land Use, Air Quality, Energy, and Water Policies of the General Plan is described in Table 4.8-3.

Table 4.8-3: General Plan Sustainability Policies

Emission Reduction Policies	Project Consistency
Air Quality Policies	
5.10.2-P3 Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.	The project proposes to use emergency generators with advanced air pollution controls. The generator testing schedule includes measures to reduce local air quality impacts.
5.10.2-P4 Encourage measures to reduce GHG emissions to reach 30 percent below 1990 levels by 2020.	Water conservation and energy efficiency measures included in the project would reduce GHG emissions associated with the generation of electricity

Table 4.8-3: General Plan Sustainability Policies	
Emission Reduction Policies	**Project Consistency**
Energy Policies	
5.10.3-P1 Promote the use of renewable energy resources, conservation and recycling programs.	The project would divert at least 50 percent of construction waste. The project would utilize lighting control to reduce energy usage for new exterior lighting and air economization for building cooling. Water efficient landscaping and ultra-low flow plumbing fixtures in the building would be installed to limit water consumption.
5.10.3-P4 Encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities.	
5.10.3-P5 Reduce energy consumption through sustainable construction practices, materials and recycling.	
5.10.3-P6 Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.	
5.10.3-P8 Provide incentives for LEED certified, or equivalent development.	
Water Policies	
5.10.4-P7 Require installation of native and low-water consumption plant species with landscaping new development and public spaces to reduce water usage.	The project would use water efficient landscaping with low water usage plant material to minimize irrigation requirements.

Bay Area 2017 Clean Air Plan

The Bay Area 2017 Clean Air Plan includes performance objectives, consistent with the State's climate protection goals under AB 32, SB 375, and SB 32, designed to reduce emissions of GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030. The 2017 Clean Air Plan identifies a range of control measures that make up the Clean Air Plan's control strategy for emissions, including GHGs.

Due to the relatively high electrical demand of the data center uses on the site, energy efficiency measures have been included in the design and operation of the electrical and mechanical systems on the site. This is in keeping with the general purpose of Energy Sector Control Measures in the Clean Air Plan.

Plan One Bay Area/California Senate Bill 375 – Redesigning Communities to Reduce Greenhouse Gases

Under the requirements of SB 375, the Metropolitan Planning Organizations (MPO) in partnership with ABAG have developed a Sustainable Community Strategy with the adopted *Plan One Bay Area* to achieve the Bay Area's regional GHG reduction target. Targets for the MTC in the San Francisco Bay Area, originally adopted in September 2010 by CARB, include a seven percent reduction in GHG per capita from passenger vehicles by 2020 compared to emissions in 2005. The adopted target for 2035 is a 15 percent reduction per capita from passenger vehicles when compared to emissions in 2005. The emission reduction targets are for those associated with land use and transportation strategies only.

The project has a low concentration of employment and would not contribute to a substantial increase in passenger vehicle travel within the region.

Applicable State Climate Change Strategies and Policies

In 2008, the Governor of California issued Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how State agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. The 2009 California Climate Adaptation Strategy was developed in response to the executive order. Adaptation to projected sea level rise is addressed in Section 4.9 Hydrology and Water Quality.

The CARB-approved Climate Change Scoping Plan outlines a comprehensive set of actions intended to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California's energy sources, save energy, create new jobs, and enhance public health. Actions associated with energy efficiency standards and renewables portfolio standards are measures that would most greatly influence GHG emissions of the project over time.

The project would be generally consistent with the Climate Change Scoping Plan, as updated, and appropriate GHG Control Measures in the Bay Area 2017 Clean Air Plan (as discussed above).

As discussed above, the project would not conflict with plans, policies or regulations adopted for the purpose of reducing the emissions of GHG. Therefore, the project would not conflict with any currently adopted local plans, policies, or regulations pertaining to GHG emissions and would not generate GHG emissions that would have a significant impact on the environment. **(Less than Significant Impact)**

4.9 HAZARDS

The following discussion is based on a Phase I Environmental Site Assessment (June 2018) prepared by ATC Group Services LLC. The report is attached as Appendix D of this Application.

4.9.1 Environmental Setting

4.9.1.1 *Regulatory Framework*

Overview

The storage, use, generation, transport, and disposal of hazardous materials and waste are highly regulated under federal and state laws. Federal regulations and policies related to development include the Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund, and the Resource Conservation and Recovery Act. In California, the EPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (CalEPA). In turn, local agencies, including the Santa Clara County Department of Environmental Health (SCCDEH) have been granted responsibility for implementation and enforcement of many hazardous materials regulations under the Certified Unified Program Agency (CUPA) program.

Worker health and safety and public safety are key issues when dealing with hazardous materials. Proper handling and disposal of hazardous material is vital if it is disturbed during project construction. Cal/OSHA enforces state worker health and safety regulations related to construction activities. Regulations include exposure limits, requirements for protective clothing, and training requirements to prevent exposure to hazardous materials. Cal/OSHA also enforces occupational health and safety regulations specific to lead and asbestos investigations and abatement.

Federal and State

Federal Aviation Regulations Part 77

Federal Aviation Regulations, Part 77 Objects Affecting Navigable Airspace (FAR Part 77) sets forth standards and review requirements for protecting the airspace for safe aircraft operation, particularly by restricting the height of potential structures and minimizing other potential hazards (such as reflective surfaces, flashing lights, and electronic interference) to aircraft in flight. These regulations require that the Federal Aviation Administration (FAA) be notified of certain proposed construction projects located within an extended zone defined by an imaginary slope radiating outward for several miles from an airport's runways, or which would otherwise stand at least 200 feet in height above the ground.

Government Code Section 65962.5

Section 65962.5 of the Government Code requires CalEPA to develop and update a list of hazardous waste and substances sites, known as the Cortese List. The Cortese List is used by state and local agencies and developers to comply with CEQA requirements. The Cortese List includes hazardous substance release sites identified by the Department of Toxic Substances Control (DTSC), State

Water Resources Control Board (SWRCB), and Santa Clara County. The project site is not on the Cortese List.[33]

California Accidental Release Prevention Program

The California Accidental Release Prevention (CalARP) Program aims to prevent accidental releases of regulated hazardous materials that represent a potential hazard beyond the boundaries of a property. Facilities that are required to participate in the CalARP Program use or store specified quantities of toxic and flammable substances (hazardous materials) that can have off-site consequences if accidentally released. The Santa Clara County Department of Environmental Health reviews CalARP risk management plans as the CUPA.

Asbestos-Containing Materials

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. Common examples of non-friable ACMs are asphalt roofing shingles, vinyl floor tiles, and transite siding made with cement. The EPA phased out use of friable asbestos products between 1973 and 1978. National Emission Standards for Hazardous Air Pollutants guidelines require that potentially friable ACMs be removed prior to building demolition or remodeling that may disturb the ACMs.

CCR Title 8, Section 1532.1

The United States Consumer Product Safety Commission banned the use of lead-based paint in 1978. Removal of older structures with lead-based paint is subject to requirements outlined by Cal/OSHA Lead in Construction Standard, CCR Title 8, Section 1532.1 during demolition activities. Requirements include employee training, employee air monitoring, and dust control. If lead-based paint is peeling, flaking, or blistered, it is required to be removed prior to demolition.

Local

Other regional agencies responsible for programs regulating emissions to the air, surface water, and groundwater include the Bay Area Air Quality Management District (BAAQMD), which has oversight over air emissions, and the Regional Water Quality Control Board (RWQCB) which regulates discharges and releases to surface waters and groundwater.

Municipal Regional Permit Provision C.12.f

Polychlorinated biphenyls (PCBs) were produced in the United States between 1955 and 1978 and used in hundreds of industrial and commercial applications, including building and structure materials such as plasticizers, paints, sealants, caulk, and wood floor finishes. In 1979, the EPA banned the production and use of PCBs due to their potential harmful health effects and persistence in the environment. PCBs can still be released to the environment today during demolition of buildings that contain legacy caulks, sealants, or other PCB-containing materials.

[33] CalEPA. "Cortese List Data Resources." Accessed October 10, 2019. https://calepa.ca.gov/sitecleanup/corteselist.

With the adoption of the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (MRP) by the San Francisco Bay Regional Water Quality Control Board on November 19, 2015, Provision C.12.f requires that permittees develop an assessment protocol methodology for managing materials with PCBs in applicable structures planned for demolition to ensure PCBs do not enter municipal storm drain systems.[34] Municipalities throughout the Bay Area are currently modifying demolition permit processes and implementing PCB screening protocols to comply with Provision C.12.f. As of July 1, 2019, buildings constructed between 1955 and 1978 that are proposed for demolition must be screened for the presence of PCBs prior to the issuance of a demolition permit.

4.9.1.2 *Existing Conditions*

Historic Uses

Based on historic aerial photographs, the project site may have historically been used for agricultural purposes from 1939 to the 1950s. The property was developed with a rectangular industrial building and yard from at least 1956 through at least 1982. During the prior industrial development of the property, a settling pond was located in the northwestern corner of the property that was used within the manufacturing processes for asbestos-cement piping.

Current Uses

The project site consists of two two-story office buildings, an adjacent data center building, paved surface parking and loading dock areas. The two, two-story buildings (2825 and 2845 Lafayette Street) each include a building of approximately 158,000 square feet in size and that was constructed between 1983 and 1984. Both office buildings were occupied by Hitachi Vantara. The eastern building (2825 Lafayette Street) generally consists of office space on both floors, common areas, a cafeteria, and maintenance rooms. The western building (2845 Lafayette Street) houses data servers and a gym on the first floor, and office space on the second floor. Major operations conducted at the facility consisted of software development and administrative services. The southern building (2805 Lafayette Street) is an existing Digital Realty data center.

The remainder of the project site contains equipment enclosures, asphalt parking areas, concrete walkways, and landscaping.

On-Site Sources of Contamination

Residual Herbicide or Pesticide Contaminants

The project site may have historically been used as agricultural land prior to the current industrial development; therefore, soils on-site could have residual herbicide or pesticide contaminants. In addition, the former rail spur along the eastern portion of the site may have involved the application of herbicide or pesticides and/or treated wood railroad ties.

[34] California Regional Water Quality Control Board. *San Francisco Bay Region Municipal Regional Stormwater NPDES Permit.* November 2015.

Residual Lead and Zinc Contamination

A review of federal, state, and local regulatory agency databases was completed to evaluate the likelihood of contamination incidents at and near the project site. The project site is not identified on any of the regulatory databases and is not on the Cortese list.[35]

Off-Site Sources of Contamination

A review of environmental databases was completed to evaluate whether the contamination on any nearby properties could impact the site. No recognized environmental conditions (RECs) were indicated and two historical recognized environmental conditions (HRECs) were discovered. HRECs are defined as past releases of any hazardous substances that have occurred in connection with the property and have been addressed to the satisfaction of the applicable regulatory authority. The two HREC sites are described below.

Historical records for 2885 Lafayette Street indicate the asbestos pipe manufacturing facility operated at the property and the south adjacent site (2805 Lafayette Street) from the mid-1950s to 1982. The property and adjacent site were investigated for asbestos and polychlorinated biphenyls (PCB)-related wastes in soil and received a closure status in 1983. In 2003, the Department of Toxic Substances Control (DTSC) recommended no further action be taken considering cleanup was completed in 1983.

The site at 800 Central Expressway is listed on the SLIC database for a release of trichloroethylene (TCE) that impacted groundwater. The site address was adjacent to the south, but the investigation included 2825 and 2845 Lafayette Street. Based on a review of the subsurface sampling reports prepared by Emcon Associates on Geotracker, dated 1987, five groundwater monitoring wells were installed at the site in 1987 for subsurface investigation purposes. A 2007 "Report of Environmental Site Assessment," prepared by Pond, Robinson & Associates LP, identified a closure letter dated 2005 issued by the Regional Water Quality Control Board (RWQCB). Based on the 2005 closure letter, the SLIC listing represents a historical recognized environmental condition.

Other Hazards

Airports

The Norman Y. Mineta San José International Airport is located approximately 0.3 mile east of the project site. The project site is within the Airport Influence Area (AIA) as defined by the Comprehensive Land Use Plan (CLUP). The AIA is a feature-based boundary around the airport within which all actions, regulations, and permits must be evaluated by local agencies, such as the City of Santa Clara, to determine how the CLUP policies related to noise, height, safety, and land use may impact the proposed development. Of particular interest to the Airport Land Use Commission (ALUC) are areas "not already devoted to incompatible uses" and, more specifically, undeveloped lands within the AIA. The planning effort is focused on identifying these lands because of the policies and standards of the plan are intended to address the compatibility of future development in these areas. Although the City must consider the CLUP's policies, the project does not need to be

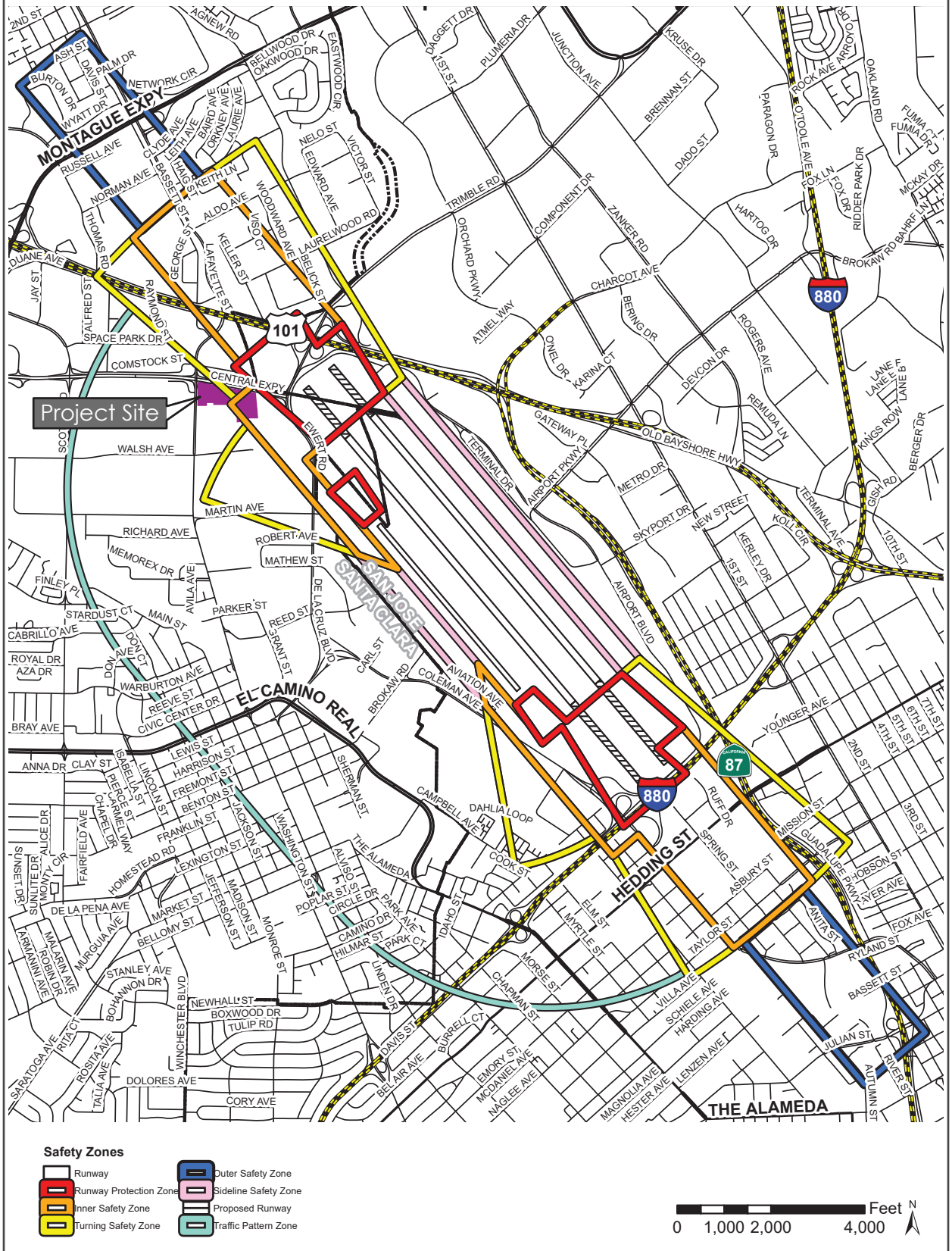
[35] CalEPA. "Cortese List Data Resources." Accessed October 10, 2019. https://calepa.ca.gov/sitecleanup/corteselist.

referred to the ALUC for a compatibility determination, because the project approvals do not involve the amendment of a General Plan or Specific Plan or adoption of a zoning ordinance.

The CLUP established airport safety zones in order to minimize the number of people exposed to potential aircraft accidents in the vicinity of the airport by imposing density and use limitations within the zones. The project site is located within the Traffic Pattern Zone (TPZ) as well as partially located within the Inner Safety Zone (ISZ) and the Turning Safety Zone (TSZ). The TPZ is defined as the portion of the airport area routinely overflown by aircraft operating in the airport traffic pattern. The potential for aircraft accidents is relatively low and the need for land use restrictions is minimal. The ISZ is defined as the approach and departure corridors that have the second highest level of exposure to potential aircraft accidents and has an open space requirement of 30 percent. A small portion of the far northeastern corner of the project site is located within the ISZ, as shown in Figure 4.9-1.[36] The TSZ is defined as the approach and departure areas that have the third highest level of exposure to potential aircraft accidents, and has an open space requirement of 20 percent. The southeastern portion of the project site is located within the TSZ.

Federal Aviation Regulations, Part 77, "Objects Affecting Navigable Airspace" (referred to as FAR Part 77), requires that the Federal Aviation Administration (FAA) be notified of certain proposed construction projects located within an extended zone defined by an imaginary slope radiating outward for several miles from an airport's runways, or which would otherwise stand at least 200 feet in height above ground. The Norman Y. Mineta San José International Airport released a contour map which includes height restrictions for new developments that could be a hazard to aircraft safety and would require FAA notification under FAR Part 77. The project site is located within a designated airport safety zone[37] and is restricted to a maximum structure height of 162 feet above mean sea level.[38] The site elevation is approximately 40 feet above mean sea level. The project site is not located in the vicinity of a private airstrip.

[36] Figure 7 from the CLUP was used to create Figure 4.9-1 in order to show the relevant airport safety zones in relation to the site plans.
[37] Santa Clara County. *Comprehensive Land Use Plan – Santa Clara County. Norman Y. Mineta San José International Airport.* May 25, 2011.
[38] Ibid.



AIRPORT SAFETY ZONES | FIGURE 4.9-1

Wildland Fire Hazards

The project site is located in an urban area and is not within a Very-High Fire Hazard Severity Zone for wildland fires. [39]

4.9.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
2) 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?	☐	☒	☐	☐
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
4) 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, will it create a significant hazard to the public or the environment?	☐	☐	☒	☐
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
6) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
7) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

[39] Sources: 1) State of California Department of Forestry and Fire Protection. *Santa Clara County Fire Hazard Severity Zones in SRA.* Adopted November 7, 2007. and 2) State of California Department of Forestry and Fire Protection. *Santa Clara County Very High Fire Hazard Severity Zones in LRA As Recommended by CAL FIRE.* Adopted October 8, 2008.

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 or residents, with certain important exceptions. One of those exceptions is that environmental documents must consider potential noise and safety impacts on projects due to proximity to an airport, pursuant to Public Resources Code 21096.

Impact HAZ-1:	The project would not create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials. **(Less than Significant Impact)**

Operation of the LBGF would include the use and storage of diesel fuel in aboveground tanks beneath each block of generators. The tanks would be double-walled and have leak detection systems. Some oils and lubricants could be stored on-site for maintenance of mechanical equipment in the equipment yards. Conformance with relevant laws and regulations would minimize the likelihood of hazardous material releases from the proposed fuel storage tanks.

Hazardous materials storage at the proposed LDC would be regulated under local, state and federal regulations. A Hazardous Materials Business Plan would be completed for the safe storage and use of chemicals. Therefore, the project would have a less than significant impact to the public or the environment. **(Less than Significant Impact)**

Impact HAZ-2:	The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

The project site may contain contaminated soil or unknown fill from previous on- and off-site uses and spills. Construction workers could be exposed to contaminated soil and or groundwater during excavation, grading, and construction activities.

Mitigation Incorporated into the Project Design:

PD HAZ-1: The project will implement the following measures to would reduce potentially significant soil and or groundwater impacts to construction workers to a less than significant level.

- Prior to the issuance of grading permits, shallow soil samples shall be taken in areas where soil disturbance is anticipated to determine if contaminated soils with concentrations above established construction/trench worker thresholds may be present due to historical agricultural use and from historical leaks and spills. The soil sampling plan must be reviewed and approved by the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division prior to initiation of work. Once the soil sampling analysis is complete, a report of the findings will be provided to the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division and other applicable City staff for review.

- Documentation of the results of the soil sampling shall be submitted to and reviewed by the City of Santa Clara prior to the issuance of a grading permit. Any soil with concentrations above applicable Environmental Screening Levels or hazardous waste limits would be characterized, removed, and disposed of off-site at an appropriate landfill according to all state and federal requirements.

- A Site Management Plan (SMP) will be prepared to establish management practices for handling impacted groundwater and/or soil material that may be encountered during site development and soil-disturbing activities. Components of the SMP will include: 1) a detailed discussion of the site background; 2) a summary of the analytical results; 3) preparation of a Health and Safety Plan by an industrial hygienist; 4) protocols for conducting earthwork activities in areas where impacted soil and/or groundwater are present or suspected; 5) worker training requirements, health and safety measures and soil handing procedures shall be described; 6) protocols shall be prepared to characterize/profile soil suspected of being contaminated so that appropriate mitigation, disposal or reuse alternatives, if necessary, can be implemented; 7) notification procedures if previously undiscovered significantly impacted soil or groundwater is encountered during construction; 8) notification procedures if previously unidentified hazardous materials, hazardous waste, underground storage tanks are encountered during construction; 9) on-site soil reuse guidelines; 9) sampling and laboratory analyses of excess soil requiring disposal at an appropriate off-site waste disposal facility; 10) soil stockpiling protocols; and 11) protocols to manage groundwater that may be encountered during trenching and/or subsurface excavation activities. Prior to issuance of grading permits, a copy of the SMP must be approved by the Santa Clara County Environmental Health Department, and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division.

- If contaminated soils are found in concentrations above risk-based thresholds pursuant to the terms of the SMP, remedial actions and/or mitigation measures will be taken to reduce concentrations of contaminants to levels deemed appropriate by the selected regulatory oversight agency for ongoing site uses. Any contaminated soils found in concentrations above thresholds to be determined in coordination with regulatory agencies shall be either 1) managed or treated in place, if deemed appropriate by the oversight agency or 2) removed and disposed of at an appropriate disposal facility according to California Hazardous Waste Regulations and applicable local, state, and federal laws.

With implementation of the measures identified above, the proposed project would result in a less than significant soil and groundwater contamination impact. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Impact HAZ-3:	The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **(Less than Significant Impact)**

The project is not located within one-quarter mile of an existing or proposed school. Scott Lane Elementary School is located 1.7 miles southwest of the site. The project would comply with all relevant laws and regulations in regards to hazardous materials, as discussed under Impact HAZ-1 and Impact HAZ-2. While the project site may contain contaminated soil, unknown fill, groundwater and soil vapor from previous on- and off-site uses and spills, implementation of measures incorporated into the project would reduce impacts to less than significant. **(Less than Significant Impact)**

Impact HAZ-4:	The project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment. **(Less than Significant Impact)**

Impacts from Historic Site Operations

As described previously, the site is not identified on any of the regulatory databases and is not in the Cortese List. Therefore, there is no potential for the project to be affected by hazardous materials from historic uses on the site.

Impacts of Off-Site Facilities on the Project

Nearby sites identified on the California Geotracker database, as described in Section 4.9.1.2 above, have received a "Case Closure" status or are identified as not posing an environmental concern to the project site. Regardless, as stated previously, the project site may contain contaminated soil and groundwater from previous off-site uses and spills. Implementation of measure PD HAZ-1 incorporated into the project would ensure that the project would not be affected by any hazardous materials from off-site facilities.

Impact HAZ-5:	The project is located within an airport land use plan and within two miles of a public airport or public use airport. The project would not result in a safety hazard or excessive noise for people residing or working in the project area. **(Less than Significant Impact)**

The proposed project site is approximately 0.3 miles west of the Norman Y. Mineta San José International Airport. As a nonresidential land use, the project would be compatible with the land use policies of the CLUP. Aircraft noise levels at the project site are discussed in Section 4.13, Noise and Vibration of this Application. As described previously, the project site is located within the AIA and is subject to a maximum structure height of 162 feet above mean sea level (amsl). The maximum height of the proposed LDC would be approximately 122 feet above ground level, or roughly 159 feet amsl, which is below the maximum building height allowed under FAR Part 77 for the project site (162 feet msl). The FAA has reviewed the project and issued Determinations of No Hazard. See Appendix E.

As discussed in Section 4.9.1.2, the project is located within the Airport's Traffic Pattern Zone (TPZ) as well as partially located within the Inner Safety Zone (ISZ) and the Turning Safety Zone (TSZ). As such, the project site must comply with the CLUP policies stating that the uses in the TSZ should be nonresidential, with a maximum of 200 people per acre, and at least 20 percent of the gross area of the site demoted to open space, while uses in the ISZ should be nonresidential, with a maximum of 120 people per acre, and at least 30 percent of the gross area of the site demoted to open space. Given the low number of employees (30 to 35) at the LDC, and the fact that at least 30 percent of the gross area will be open space within these zones, the project would comply with the TSZ and ISZ standards. **(Less than Significant Impact)**

Impact HAZ-6:	The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. **(Less than Significant Impact)**

The project would be constructed in accordance with current building and fire codes to ensure structural stability and safety in the event of a seismic or seismic-related hazard. In addition, the Fire Department would review the site development plans to ensure fire protection design features are incorporated and adequate emergency access is provided. For these reasons, the proposed project would not impair implementation of or physically interfere with the City's Emergency Operations Plan. **(Less than Significant Impact)**

Impact HAZ-7:	The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. **(No Impact)**

The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones; therefore, the project would not result in wildfire impacts. **(No Impact)**

4.10 HYDROLOGY AND WATER QUALITY

4.10.1 Environmental Setting

4.10.1.1 *Regulatory Framework*

Water Quality

The federal Clean Water Act and California's Porter-Cologne Water Quality Control Act are the primary laws related to water quality in California. Regulations set forth by the U.S. Environmental Protection Agency (EPA) and the State Water Resources Control Board (SWRCB) have been developed to fulfill the requirements of this legislation. EPA regulations include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into the waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented at the regional level by the Regional Water Quality Control Boards (RWQCBs). These regulations are implemented at the regional level by water quality control boards, which for the Santa Clara area is the San Francisco Bay Regional Water Quality Control Board (RWQCB).

Federal

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) established the National Flood Insurance Program (NFIP) in order to reduce impacts of flooding on private and public properties. The program provides subsidized flood insurance to communities that comply with FEMA regulations protecting development in floodplains. As part of the program, FEMA publishes Flood Insurance Rate Maps (FIRM) that identify Special Flood Hazard Areas (SFHA). An SFHA is an area that would be inundated by the one-percent annual chance flood, which is also referred to as the base flood or 100-year flood.

State

Statewide Construction General Permit

The SWRCB has implemented a NPDES General Construction Permit for the State of California (Construction General Permit). For projects disturbing one acre or more of soil, a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) must be prepared by a qualified professional prior to commencement of construction. The Construction General Permit includes requirements for training, inspections, record keeping, and for projects of certain risk levels, monitoring. The general purpose of the requirements is to minimize the discharge of pollutants and to protect beneficial uses and receiving waters from the adverse effects of construction-related storm water discharges.

Regional

San Francisco Bay Basin Plan

The San Francisco Bay RWQCB regulates water quality in accordance with the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan lists the beneficial uses

that the San Francisco Bay RWQCB has identified for local aquifers, streams, marshes, rivers, and the San Francisco Bay, as well as the water quality objectives and criteria that must be met to protect these uses. The San Francisco Bay RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements, including permits for nonpoint sources such as the urban runoff discharged by a City's stormwater drainage system. The Basin Plan also describes watershed management programs and water quality attainment strategies.

Municipal Regional Stormwater Permit

The San Francisco Bay RWQCB has issued a Municipal Regional Stormwater NPDES Permit[40] (MRP) to regulate stormwater discharges from municipalities and local agencies (co-permittees) in Alameda, Contra Costa, San Mateo, and Santa Clara Counties, and the cities of Fairfield, Suisun City, and Vallejo.

Provision C.3 – New Development and Redevelopment

Under Provision C.3 of the MRP, new and redevelopment projects that create or replace 10,000 square feet or more of impervious surface area are required to implement site design, source control, and Low Impact Development (LID)-based stormwater treatment controls to treat post-construction stormwater runoff. LID-based treatment controls are intended to maintain or restore the site's natural hydrologic functions, maximizing opportunities for infiltration and evapotranspiration, and using stormwater as a resource (e.g. rainwater harvesting for non-potable uses). The MRP also requires that stormwater treatment measures are properly installed, operated and maintained.

In addition to water quality controls, the MRP 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. Projects may be deemed exempt from these requirements if they do not meet the size threshold, drain into tidally influenced areas or directly into the Bay, drain into hardened channels, or are infill projects in subwatersheds or catchment areas that are greater than or equal to 65 percent impervious.

Provision C.12 – PCBs Controls

Provision C.12 of the MRP requires the co-permittee agencies to implement a control program for polychlorinated biphenyls (PCBs) that reduces PCBs loads by a specified amount during the term of the permit, thereby making substantial progress toward achieving the urban runoff PCBs wasteload allocation in the Basin Plan by March 2030.[41] The program must include focused implementation of PCBs control measures (source control, treatment control, and pollution prevention strategies) through a collaborative effort. One of the strategies that has been recently adopted by municipalities region-wide is the updating of their building demolition permitting processes to incorporate the management of PCBs in building materials. The goal is to ensure that PCBs are not discharged to storm drains during demolition of buildings that contain PCBs in building materials (such as certain older caulks, paints, and mastics).

[40] MRP Number CAS612008
[41] San Francisco Bay RWQCB, Municipal Regional Stormwater Permit, Provision C.12. November 19, 2015.

The Bay Area Stormwater Management Agencies Association (BASMAA) is assisting Bay Area municipalities to comply with these new stormwater permit building demolition requirements.

Santa Clara Valley Water District

The Santa Clara Valley Water District (Valley Water) operates as the flood control agency for Santa Clara County. Their stewardship also includes creek restoration, pollution prevention efforts, and groundwater recharge. Permits for well construction and destruction work, most exploratory boring for groundwater exploration, and projects within Valley Water property or easements are required under Valley Water's Water Resources Protection Ordinance and District Well Ordinance.

Impaired Surface Water Bodies

Under Section 303(d) of the 1972 Clean Water Act, states are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern.[42] The TMDL is the quantity of pollutant that can be safely assimilated by a water body without violating water quality standards. Listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses; rather, the intent is to identify the water body as requiring future development of a TMDL to maintain water quality and reduce the potential for future water quality degradation. The Guadalupe River is listed as an impaired waterbody in the U.S. EPA's Section 303(d) Listed Waters for California. The source of impairment is attributed to urban runoff/storm sewers, mine tailings, and illegal dumping. The contaminants listed include diazinon, mercury and trash.[43]

National Flood Insurance Program

The National Flood Insurance Program (NFIP) makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The Federal Emergency Management Agency (FEMA) manages the NFIP and creates Flood Insurance Rate Maps (FIRMs) that designate 100-year flood hazard zones and delineate other flood hazard areas. A 100-year flood hazard zone is the area that has a one in one hundred (i.e., one percent) chance of being flooded in any one year based on historical data. The site is located in zone AH, a 100-year flood hazard zone, with depths of 1 to 3 feet.

Santa Clara General Plan

General Plan policies related to hydrology and water quality and applicable to the project include the following.

Policy 5.10.5-P11: Require that new development meet stormwater and water management requirements in conformance with state and regional regulations.

[42] California State Water Resources Control Board. Total Maximum Daily Load Program. Available at: < http://www.swrcb.ca.gov/water_issues/programs/tmdl/303d_lists2006_approved.shtml>. Accessed October 25, 2019.
[43] U.S. EPA. *California 303(d) Listed Waters for Reporting Year 2010.* December 2010. Available at: < http://www.waterboards.ca.gov/water_issues/programs/tmdl/2010state_ir_reports/category5_report.shtml> Accessed on October 25, 2019.

Policy 5.10.5-P13: Require that development complies with the Flood Damage Protection Code.

Policy 5.10.5-P15: Require new development to minimize paved and impervious surfaces and promote on-site Best Management Practices for infiltration and retention, including grassy swales, pervious pavement, covered retention areas, bioswales, and cisterns, to reduce urban water run-off.

Policy 5.10.5-P16: Require new development to implement erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity and protect water quality.

Policy 5.10.5-P17: Require that grading and other construction activities comply with the Association of Bay Area Governments' Manual of Standards for Erosion and Sediment Control Measures and with the California Stormwater Quality Association, Stormwater Best Management Practice Handbook for Construction.

Policy 5.10.5-P18: Implement the Santa Clara Valley Nonpoint Source Pollution Control Program, Santa Clara Valley Urban Runoff Pollution Prevention Program and the Urban Runoff Management Plan.

Policy 5.10.5-P20: Maintain, upgrade and replace storm drains in the City to reduce potential flooding.

Policy 5.10.5-P21: Require that storm drain infrastructure is adequate to serve all new development and is in place prior to occupancy.

Santa Clara City Code

Chapter 13.20, Storms Drains and Discharges, of City Code is enacted for the protection of health, life, resources and property through prevention and control of unauthorized discharges into watercourses. The primary goal of this chapter is the cleanup of stormwater pollution from urban runoff that flows to creeks and channels, eventually discharging into the San Francisco Bay. The City Code also includes Flood Damage Prevention Code (Chapter 15.45) and requirements for grading and excavation permits and erosion control (Chapter 15.15).

4.10.1.2 *Existing Conditions*

Flooding

According to the FEMA's Flood Insurance Rate Map, the project site is located within Zone X and Zone AH.[44] The north portion of the site is located in Zone X in an area with reduced flood risk due to levee. The south portion of the site is located in Zone AH, defined as "Flood depths of 1 to 3 feet (usually areas of ponding): Base Flood Elevations determined." The existing elevation is approximately 40 feet above mean sea level (msl).

[44] Federal Emergency Management Agency, Flood Insurance Rate Map, Community Panel No. 06085C0064H, May 18, 2009.

Inundation Hazards

The proposed project site is located approximately 0.7 miles southwest of the Guadalupe River and one mile east of the San Tomas Aquino Creek. There are no dams or levee systems in the project area.

In the ocean, seismically-induced waves are caused by displacement of the sea floor by a submarine earthquake and are called tsunamis. Seiches are waves produced in a confined body of water such as a lake or reservoir by earthquake ground shaking or land sliding. Seiches are possible at reservoir, lake or pond sites. The project area is not subject to inundation from a seiche, tsunami, or mudflow.[45]

Storm Drainage

The City of Santa Clara owns and maintains the municipal storm drainage system in the project vicinity. Stormwater on site currently drains to an on-site catch basin or drains as sheet flow towards the storm drainage system on Lafayette Street. The runoff eventually empties into the Guadalupe River and flows into the San Francisco Bay.

Groundwater

The project site is located within the Santa Clara Valley groundwater basin and the Santa Clara sub-basin.[46,47] The site is within the Santa Clara Plain Confined Area and is not within an area used for in-stream or other groundwater recharge.[48] Depth to groundwater beneath the project site is typically encountered at 13-14 below ground surface (bgs), and flows in a northeasterly direction.[49] The depth to groundwater can vary due to factors such as variations in rainfall, temperature, runoff, irrigation, and groundwater withdrawal and/or recharge. The regional topographic gradient is generally north northeast towards the bay.

[45] Association of Bay Area Governments, San Francisco Bay Area Hazards, July 12, 2018.
[46] California Department of Water Resources. *A Comprehensive Groundwater Protection Evaluation for the South San Francisco Bay Basins.* May 2003. Figure 9.
[47] Santa Clara Valley Water District. Groundwater Management Plan. 2012.
[48] Santa Clara Valley Water District. Groundwater Management Plan. 2012.
[49] ATC Group Services LLC. *Phase I Environmental Assessment*. June 1, 2018.

4.10.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
2) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
– result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
– 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; or	☐	☐	☒	☐
– impede or redirect flood flows?	☐	☐	☒	☐
4) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
5) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. There are no potential impacts associated with the LBGF as all of the potential impacts are associated with the LDC.

Impact HYD-1:	The project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

The LDC would create or replace more than 10,000 square feet of impervious surface area and, therefore, is classified as a Regulated Project under the MRP's Provision C.3, meaning it is subject to the LID source control, site design and stormwater treatment control requirements of Provision C.3. The LDC would include stormwater quality best management practices (BMPs) such as directing site runoff into bioswales and replacing a portion of the existing paved parking area with pervious pavement (turf block). In addition, the use of beneficial landscaping (i.e., minimizing irrigation, pesticides and fertilizer application) would be implemented. These measures are consistent with the site design, treatment control and source control requirements of Provision C.3.

Construction Impacts

Implementation of the project would disturb approximately 15 acres. Therefore, requirements under the City's MRP would apply to the project. Construction activities could generate dust, sediment, litter, oil, and other pollutants that could temporarily contaminate water runoff from the site. The City of Santa Clara has developed Standard Permit Conditions based on the RWQCB BMPs to reduce construction-related water quality impacts.

Mitigation Incorporated into the Project Design:

PD HYD-1: The LDC will incorporate the following into the design and these measures should be treated as mitigation incorporated into the project. The following will reduce construction-related water quality impacts:

- 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 shall be suspended during periods of high winds.
- All exposed or disturbed soil surfaces shall be watered at least twice daily to control dust as necessary.
- Stockpiles of soil or other materials that can be blown by the wind shall be watered or covered.
- All trucks hauling soil, sand, and other loose materials shall be required to cover all trucks or maintain at least two feet of freeboard.
- All paved access roads, parking areas, and staging areas adjacent to the construction sites shall be swept daily (with water sweepers).
- Vegetation in disturbed areas shall be replanted as quickly as possible.

- All unpaved entrances to the site shall be filled with rock to knock mud from truck tires prior to entering City streets. A tire wash system may also be employed at the request of the City.

The LDC would include the above measures to avoid or reduce construction-related water quality impacts to less than significant level.

Impervious and Pervious Surfaces

The LDC drainage infrastructure would include overland stormwater management basins and would connect to the existing City of Santa Clara storm drain system. Bioretention areas would be installed in on-site landscape areas as part of the LDC, which would help to detain stormwater runoff and infiltrate water into the soil. Additional C.3/post-construction measures, such as directing runoff to vegetated swales, would be implemented. On-site drainage facilities would be designed to meet City of Santa Clara standards and would drain to the existing storm drain system.

Table 4.10-1 below shows the differences in impervious and pervious cover between the proposed project and existing conditions. The current site includes 88 percent impervious cover and the proposed project would include 79 percent impervious cover, reducing the amount of impervious area by over 12,000 sf.

Table 4.10-1: Pervious/Impervious Surfaces

	Impervious (sf)	Pervious (sf)	Total Area (sf)	Percent Impervious
Existing	872,019	119,406	991,425	88%
Proposed	784,980	206,445	991,425	79%

Since the LDC would lead to an increase in the amount of pervious surface on the site, the LDC could potentially reduce the overall amount of runoff that leaves the site and enters the existing storm drain system. The LDC would, therefore, not contribute runoff water that would exceed the capacity of the existing City of Santa Clara stormwater drainage systems. **(Less than Significant Impact with Mitigation Incorporated into the Design)**

Impact HYD-2:	The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. **(Less than Significant Impact)**

The project does not propose to pump groundwater or install groundwater extraction wells. In addition, the project site is not within an area used for groundwater recharge. For these reasons, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. **(Less Than Significant Impact)**

Impact HYD-3:	The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site; 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; or impede or redirect flood flows. **(Less than Significant Impact)**

The project would not alter the course of a stream, river, or other waterway. As discussed under Impact HYD-1, the LDC would result in a decrease in surface runoff from the site compared to existing conditions. As a result, no off-site flooding would occur. In addition, as discussed under Impact HYD-1, the project would implement best management practices to reduce stormwater runoff water quality impacts to a less than significant level. **(Less than Significant Impact)**

Impact HYD-4:	The project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. **(Less than Significant Impact)**

Flooding, Tsunami and Seiche

A portion of the project site is located within Flood Zone AH, which has a one percent annual chance of shallow flooding. In response, the elevation of the LBGF and the first floor elevations of the LDC would conform to the City's Flood Damage Prevention Code by being elevated to/above the base flood elevation, ensuring that the proposed facilities do not flood. Hazardous materials on-site would be stored and contained in accordance with regulations to prevent accidental release (refer to Section 4.9 for additional details). For this reason, the project would not risk release of pollutants due to project flooding. Additionally, as discussed in Section 4.10.1.2, the project area is not subject to inundation from a seiche, tsunami, or mudflow.

Dam Inundation Hazards

The project area is within the dam failure inundation area for Lexington Reservoir (Lenihan Dam)[50]. Lexington Reservoir is maintained by the Santa Clara Valley Water District (SCVWD) and the dam is continuously monitored for seepage and settling and inspected when an earthquake occurs. Due to the inspection and monitoring program, the distance from the site, and the nature of the on-site uses, proposed site improvements are not anticipated to result in a new substantial hazard from dam failure. While inundation resulting from dam failure could result in damage to structures, the probability of such a failure is extremely remote. The project, therefore, would not be subject to a significant risk of inundation from dam failure.

For the reasons described above, the project would have a less than significant impact. **(Less than Significant Impact)**

[50] Santa Clara Valley Water District. *Anderson Dam 2016 Flood Inundation Maps*. 2016. Accessed: October 25, 2019. https://www.valleywater.org/sites/default/files/Anderson%20Dam%20Inundation%20Maps%202016.pdf.

Impact HYD-5:	The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. **(Less than Significant Impact)**

As discussed under Impact HYD-1, the project would comply with applicable water quality control regulations and would not substantially decrease groundwater supplies or interfere with groundwater recharge. **(Less than Significant Impact)**

4.11 LAND USE AND PLANNING

4.11.1 Environmental Setting

4.11.1.1 *Regulatory Framework*

General Plan Land Use Designation

The Land Use Diagram of the 2010-2035 General Plan contains three phases: Phase 1: 2010-2015, Phase II: 2015-2023, and Phase III: 2023-2035. The project site is designated as Heavy Industrial and would retain its designation for Phases I, II and III. The Heavy Industrial classification allows primary manufacturing, refining and similar activities. It also accommodates warehousing and distribution, as well as data centers. Support ancillary office space, excluding medical facilities, or retail associated with the primary use, may be up to a maximum of ten percent of the building area. No standalone retail uses are allowed. Because uses in the designation may be noxious or include hazardous materials, places of assembly, such as religious institutions and schools, and uses catering predominately to sensitive receptors, such as children and the elderly, as well as entertainment uses such as clubs, theaters and sports venues south of U.S. Highway 101, are prohibited. The maximum floor area ratio (FAR) allowed under this designation is 0.45.

Zoning Designation

The project site is zoned MH - Heavy Industrial. The MH – Heavy Industrial zoning designation (Chapter 18.50 of the City Code) is intended for (but not limited to) any use permitted in the MP and ML districts, manufacturing, processing, assembling, research, wholesale, railroad yards, freight stations, trucking and motor freight stations, public utility and public service uses and public utility service yards, outdoor storage and exposed mechanical appurtenances, incidental retail sales of industrial products, and incidental and accessory buildings and uses of a similar nature. Retail commercial and service uses, kennels, and lumber yards (and other similar uses) may also be allowed as a conditional use with City approval of a Use Permit. The maximum permitted building height within this zone is 70 feet.

Norman Y. Mineta San José International Airport

The proposed project site is approximately 0.3 miles west of the Norman Y. Mineta San José International Airport (Airport) and is located within the Airport Influence Area (AIA) defined by the Santa Clara County Airport Land Use Commission's Comprehensive Land Use Plan (CLUP) for the Airport. Development within the AIA can be subject to hazards from aircraft and also pose hazards to aircraft travelling to and from the airport. The AIA is a composite of areas surrounding the airport that are affected by noise, height and safety considerations. These hazards are addressed in Federal and State regulations as well as in land use regulations and policies in the CLUP. The most recent CLUP for the Airport was adopted in 2011. The project site is located within Part 77 Surface zone 162, which limits the building height to a maximum of 162 feet above mean seal level.[51]

[51] Santa Clara County Airport Land Use Commission. *Comprehensive Land Use Plan.* Figure 7. Amended November 16, 2016.

4.11.1.2 *Existing Conditions*

The project area consists primarily of industrial land uses. The project site is designated as Heavy Industrial in the General Plan and is zoned MH - Heavy Industrial. The surrounding land uses to the north, south, and east of the project site are designated as Heavy Industrial, which allows primary manufacturing, refining and similar activities. It also accommodates warehousing and distribution, as well as data centers. Support ancillary office space, excluding medical facilities, or retail associated with the primary use, may be up to a maximum of ten percent of the building area. The maximum floor area ratio (FAR) allowed under this designation is 0.45. The land uses to the west of the project site are designated as Light Industrial, which has a maximum FAR of 0.6.

4.11.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Physically divide an established community?	☐	☐	☐	☒
2) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact LU-1:	The project would not physically divide an established community. **(No Impact)**

The project site is located in an industrial area surrounded by industrial development and office uses. It would not include any physical features that would physically divide the community (e.g., blocking of roadways or sidewalks) and would not interfere with the movement of residents through a neighborhood. For these reasons, construction of the proposed project would not divide an established community. **(No Impact)**

Impact LU-2:	The project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. **(Less than Significant Impact)**

Consistency with Applicable Local Plans, Policies, and Regulations

Santa Clara General Plan

The project site is designated Heavy Industrial and would retain its designation. The Heavy Industrial classification allows primary manufacturing, refining and similar activities. It also accommodates

warehousing and distribution, as well as data centers and supporting backup generation facilities. Therefore, the proposed project is consistent with the uses contemplated in the General Plan for the Heavy Industrial land use designation on the site. The proposed FAR of the LDC, 1.27, is inconsistent with the maximum FAR of 0.45 specified in the General Plan for the Heavy Industrial land use classification. While the LDC is not strictly consistent with this component of the land use classification (Section 5.2.2), the maximum FAR described in the General Plan is not policy adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

The project area consists primarily of industrial land uses, including other data centers. The Airport is located approximately 0.3 miles east of the site. Aircraft, along with truck and other vehicle traffic, are readily apparent in the area. The proposed project would be compatible with the surrounding industrial land uses and would not interfere with the existing operations of adjacent or nearby businesses.

The nearest sensitive receptors to the proposed project site are existing residences along Lafayette Street, about 2,570 feet southwest of the southern project boundary.

Noise and lighting levels associated with the proposed project are not anticipated to adversely affect adjacent properties. The proposed project, therefore, would not introduce a land use to the site that would create a land use compatibility conflict in the project area.

City Code

As stated above, the project site is zoned MH - Heavy Industrial. The MH – Heavy Industrial zoning designation (Chapter 18.50 of the City Code) is intended for (but not limited to) any use permitted in the MP and ML districts. The City has routinely approved of data centers and supporting backup generation facilities as a use consistent with the ML zoning designation.

The maximum permitted building height within this zone is 70 feet. The City allows up to a 25 percent increase in permitted building heights with a minor modification to the zoning requirements. With approval of a minor modification, the proposed LDC building height of 82 feet would be consistent with the zoning on the site. Per Section 18.64.010(a), the proposed parapets are not subject to the height restrictions.

Noise generated by the project would comply with the City Code noise limit for heavy industrial land uses of 75 dBA (Section 9.10.040). While noise generated from project construction could reach a maximum of 79 dBA at the nearest outdoor receptor, measures included in the project would reduce the impact to less than significant (see Section 4.13 Noise).

The proposed project, therefore, would not conflict with the City's General Plan or Zoning Ordinance.

Consistency with the San José International Airport Comprehensive Land Use Plan

The project site is located within the AIA of the San José International Airport and within the 65 CNEL noise contour for aircraft overflights. It is also located within the turning safety zone that extends to the northwest from the end of the airport runways. Potential conflicts related to the building height or aircraft noise are discussed in Section 4.9 and Section 4.13, respectively. The project would not conflict with the CLUP.

For all the reasons listed above, the project would not conflict with any land use plans, policies, or regulations; therefore, the project would have a less than significant impact. **(Less than Significant Impact)**

4.12 MINERAL RESOURCES

4.12.1 Environmental Setting

4.12.1.1 *Regulatory Framework*

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) was enacted by the California Legislature in 1975 to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property and the environment. As mandated under SMARA, the State Geologist has designated mineral land classifications in order to help identify and protect mineral resources in areas within the state subject to urban expansion or other irreversible land uses which would preclude mineral extraction. SMARA also allowed the State Mining and Geology Board, after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance.

4.12.1.2 *Existing Conditions*

The City of Santa Clara is located in an area zoned MRZ-1 for aggregate materials by the State of California. MRZ-1 zones are areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence. The area is not known to support significant mineral resources of any type. No mineral resources are currently being extracted in the City. The State Office of Mine Reclamation's list of mines (AB 3098 list) regulated under the Surface Mining and Reclamation Act does not include any mines within the City.

4.12.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state?	☐	☐	☐	☒
2) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact MIN-1:	The project would not result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state. **(No Impact)**

The project site does not contain any known or designated mineral resources. The project, therefore, would not result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state. **(No Impact)**

Impact MIN-2:	The project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. **(No Impact)**

The project site is not delineated in the General Plan or other land use plan as a locally important mineral resource recovery site. For this reason, the project would not 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. **(No Impact)**

4.13 NOISE

The following discussion is based, in part, on a Noise Assessment Report[52] prepared by Illingworth & Rodkin in October 2019, which is included as Appendix F to this application.

4.13.1 Environmental Setting

Noise

Factors that influence sound as it is perceived by the human ear, include the actual level of sound, period of exposure, frequencies involved, and fluctuation in the noise level during exposure. Noise is measured on a decibel scale, which serves as an index of loudness. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness. Because the human ear cannot hear all pitches or frequencies, sound levels are frequently adjusted or weighted to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dBA.

Since excessive noise levels can adversely affect human activities and human health, federal, state, and local governmental agencies have set forth criteria or planning goals to minimize or avoid these effects. Noise guidelines are generally expressed using one of several noise averaging methods, including L_{eq}, DNL, or CNEL.[53] These descriptors are used to measure a location's overall noise exposure, given that there are times when noise levels are higher (e.g., when a jet is taking off from an airport or when a leaf blower is operating) and times when noise levels are lower (e.g., during lulls in traffic flows on freeways or in the middle of the night). L_{max} is the maximum A-weighted noise level during a measurement period.

Sensitivity to noise increases during the evening and at night because excessive noise interferes with the ability to sleep. To emphasize quiet-time noise events, the Day/Night Average Sound Level (DNL or L_{dn}) and CNEL were developed to measure the average cumulative noise exposure over a 24-hour period. Both DNL and CNEL include a 10 dB addition to noise levels from 10:00 PM to 7:00 AM to account for human sensitivity to night noise, while CNEL also includes a five dB addition to noise generated between 7:00 PM and 10:00 PM.

Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Vibration amplitude can be quantified using Peak Particle Velocity (PPV), which is defined as the maximum instantaneous positive or negative peak of the vibration wave. PPV has been routinely used to measure and assess ground-borne construction vibration. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 inches per second (in/sec) PPV.

[52] The technical report analyzed impacts of a 552,500 square foot project.

[53] L_{eq} is a measurement of average energy level intensity of noise over a given period of time. Day-Night Level (DNL) is a 24-hour average of noise levels, with a 10 dB penalty applied to noise occurring between 10:00 PM and 7:00 AM. Community Noise Equivalent Level (CNEL) includes an additional five dB applied to noise occurring between 7:00 PM and 10:00 PM. Where traffic noise predominates, the CNEL and DNL are typically within two dBA of the peak-hour L_{eq}.

4.13.1.1 *Regulatory Framework*

State and Local

California Green Building Standards Code

For commercial uses, CALGreen (Section 5.507.4.1 and 5.507.4.2) requires that wall and roof-ceiling assemblies exposed to the adjacent roadways have a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 when the commercial property falls within the 65 dBA L_{dn} or greater noise contour for a freeway or expressway, railroad, or industrial or stationary noise source. The state requires interior noise levels to be maintained at 50 dBA $L_{eq(1\text{-}hr)}$ or less during hours of operation at a proposed commercial use.

General Plan

The City of Santa Clara General Plan identifies noise and land use compatibility standards for various land uses (General Plan Table 5.10-2). The noise standard is 70 dBA Community Noise Equivalent Level (CNEL) for uses with an industrial land use designation and 55 dBA CNEL for uses with a residential land use designation. The following policies are applicable to the project:

Policy 5.10.6-P1: Review all land use and development proposals for consistency with the General Plan compatibility standards and acceptable noise exposure levels defined on Table 5.10-1.

Policy 5.10.6-P3: New development should include noise control techniques to reduce noise to acceptable levels, including site layout (setbacks, separation and shielding), building treatments (mechanical ventilation system, sound-rated windows, solid core doors and baffling) and structural measures (earthen berms and sound walls)

Policy 5.10.6-P4: Encourage the control of noise at the source through site design, building design, landscaping, hours of operation and other techniques.

Policy 5.10.6-P5: Require noise-generating uses near residential neighborhoods to include solid walls and heavy landscaping along common property lines, and to place compressors and mechanical equipment in sound-proof enclosures.

Policy 5.10.6-P6: Discourage noise sensitive uses, such as residences, hospitals, schools, libraries and rest homes, from areas with high noise levels, and discourage high noise generating uses from areas adjacent to sensitive uses.

Policy 5.10.6-P7: Implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to aircraft noise in order to make Office/research and Development uses compatible with the Norman Y. Mineta San José International Airport land use restrictions.

City Code

Chapter 9.10 "Regulation of Noise and Vibration," of the City of Santa Clara City Code identifies allowable hours for construction to limit impacts to sensitive uses within 300 feet of a project site. The project site is bordered on all sides by heavy industrial uses, which would not be considered noise sensitive. Office uses are located about 2,200 feet to the southwest. The closest residences are located about 4,200 feet to the south and 3,800 feet to the north of the project site and are well shielded by intervening structures. The project would not be subject to the City Code regulations on construction hours.

Norman Y. Mineta San José International Comprehensive Land Use Plan

The Santa Clara County Airport Land Use Commission (ALUC) has adopted a Land Use Compatibility table for projects near Norman Y. Mineta San José International Airport (Airport). Under the ALUC's land use compatibility noise policies, industrial uses are compatible in noise environments (from aircraft overflights) that are 70 CNEL or less. The site is located in area between the 65 and 70 CNEL airport noise contours on the Comprehensive Land Use Plan noise map.

4.13.1.2 *Existing Conditions*

The project site is surrounded by industrial uses. The predominant sources of noise in the project vicinity include traffic on Central Expressway, aircraft noise associated with Norman Y. Mineta San José International Airport, mechanical noise from the surrounding industrial sites, and railroad train operations. As mentioned, any sensitive receptors are well over 2,000 feet away from the project site.

A noise monitoring survey was completed between Wednesday, May 29, 2019 and Friday, May 31, 2019 to quantify ambient noise levels at the site and in the surrounding area. Table 4.13-1 below shows a summary of the short-term noise measurements taken.

Table 4.13-1: Summary of Short-Term Noise Measurements (dBA)

ID	Location (Date, Start Time)	Measured Noise Levels, dBA				Primary Noise Source
		L10	L50	L90	Leq	
ST-1	Northeast corner of site, 125 feet south of Central Expressway center line	69	62	58	69	Jet takeoffs, traffic from Central Expressway
ST-2	Between buildings, 150 feet north of southern property line	60	54	52	57	Mechanical equipment, jet takeoffs
ST-3	Along southern property line, 480 feet east of Lafayette Street	64	61	60	62	Industrial plant, mechanical equipment
ST-4	Parking lot on western side of property, 110 feet east of Lafayette Street Center line	70	67	66	68	Industrial plant, traffic

4.13.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
2) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

NOISE MEASUREMENT LOCATIONS | FIGURE 4.13-1

Impact NOI-1:	The project would not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. **(Less than Significant Impact)**

Operation

A significant impact would be identified if project construction or operations would result in substantial temporary or permanent increases in ambient noise levels at sensitive receivers in excess of the standards contained in the Santa Clara General Plan or Municipal Code.

The primary operational sources of noise from the project would be rooftop mechanical equipment at the LDC and emergency generators at the LBGF. The predominant source of rooftop mechanical equipment at the LDC would be 37 air-cooled rooftop units, which would operate continuously. All rooftop equipment would be shielded by 11-foot tall screen walls. Forty-five three-megawatt (MW) generators would be located on the south side of the proposed new building. A sound attenuating enclosure wall would be provided for each generator that is designed to limit noise to 80 dBA at 23 feet. The generator yard would also be shielded by a 12-foot tall screen wall. Other mechanical and electrical equipment located inside the LDC building would not be anticipated to emit audible noise outside.

Under the City of Santa Clara Municipal Code, noise generated by non-emergency fixed sources of noise would be restricted to 75 dBA at adjacent heavy industrial land uses. The noise limits at the nearest residences located roughly 3,800 feet away would be 55 dBA during the daytime and 50 dBA at night. The proposed project's noise levels during normal operation would meet the Municipal Code limit at all nearby receptors, and sound levels at the nearest residential areas would be well below the criteria during all operating scenarios. During a complete power failure with all generators operating, which would be exempt from the Municipal Code limits, noise levels would still not be audible above ambient noise levels at any sensitive receptors.

Construction

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time. Project construction is anticipated to occur over an approximate period of 24 months. However, noise would be generated during only a portion of this period, as interior construction activities would not be anticipated to generate substantial noise.

Thresholds for speech interference indoors is 45 dBA. Assuming a 15 dBA exterior-to-interior reduction for standard residential construction and a 25 dBA exterior-to-interior reduction for standard commercial construction, this would correlate to an exterior threshold of 60 dBA L_{eq} at residential land uses and 70 dBA L_{eq} at commercial land uses. Additionally, temporary construction would be annoying to surrounding land uses if the ambient noise environment increased by at least 5

dBA L_{eq} for an extended period of time. Therefore, the temporary construction noise impact would be considered significant if project construction activities exceeded 70 dBA L_{eq} at nearby commercial land uses and exceeded the ambient noise environment by 5 dBA L_{eq} or more for a period longer than one year. There are no residential land uses adjacent to the site. The nearby industrial land uses are not considered noise-sensitive and would not be subject to temporary construction noise regulations.

Two of the existing buildings on the project site would be demolished to allow for construction of the project. The project would require approximately 24 months for completion. Construction activities would be carried out in stages. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. Table 4.13-2 shows the average noise level ranges, by construction phase, and Table 4.13-3 shows the maximum noise level ranges for different construction equipment. Most demolition and construction noise falls within the range of 80 to 90 dBA at a distance of 50 feet from the site.

Table 4.13-2: Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		**Office Building, Hotel, Hospital, School, Public Works**		**Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station**		**Public Works Roads & Highways, Sewers, and Trenches**	
	I	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.
Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

Table 4.13-3: Construction Equipment 50-foot Noise Emission Limits		
Equipment Category	**L_{max} Level (dBA)1,2**	**Impact/Continuous**
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes:

1. Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant.
2. Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.
3. Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

Source: Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, National Cooperative Highway Research Program, 1999.

Construction activities would include demolition, site preparation, grading and excavation, trenching, building (exterior), interior/architectural coating and paving. The LDC would involve augered piles for the deep pile foundations, and pile driving may be used for construction of the building foundation. Hourly average noise levels due to construction activities during busy construction periods outdoors would typically range from about 75 to 88 dBA L_{eq} at a distance of 50 feet. Impact pile driving would generate maximum noise levels of up to about 101 dBA L_{max} at a distance of 50 feet, with an hourly average noise level of 5 dBA L_{eq}. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding from intervening structures or buildings would be anticipated to provide 10 to 20 dBA or more of additional noise reduction.

For all the reasons listed above, the project would have less than significant impact because it would not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the Santa Clara General Plan or Municipal Code. **(Less than Significant Impact)**

Impact NOI-2:	The project would not result in generation of excessive groundborne vibration or groundborne noise levels. **(Less than Significant Impact)**

Construction Vibration

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used. Construction activities would include demolition, site preparation, grading and excavation, trenching, building (exterior), interior/ architectural coating and paving.

The City of Santa Clara does not specify a construction vibration limit. However, the California Department of Transportation California Department of Transportation recommends a vibration limit of 0.5 in/sec Peak Particle Velocity (PPV) for buildings that are structurally sound and designed to modern engineering standards, which typically consist of buildings constructed since the 1990s. A conservative vibration limit of 0.3 in/sec PPV has been used for buildings that are found to be structurally sound but where structural damage is a major concern. For historical buildings or buildings that are documented to be structurally weakened, a conservative limit of 0.08 in/sec PPV is often used to provide the highest level of protection. This analysis assumes that buildings adjoining the site were constructed prior to the 1990s and are structurally sound. Therefore, ground-borne vibration levels exceeding the conservative 0.3 in/sec PPV limit would have the potential to result in a significant vibration impact.

Construction activities are anticipated to last 24 months. The closest structures to the project site are industrial buildings located 100 to 160 feet from the property line. Table 4.13-4 below presents typical vibration levels that could be expected from construction equipment at a reference distance of 25 feet and at distances of 100 and 160 feet, representative of the closest industrial structures to the project site.

Table 4.13-4: Vibration Source Levels for Construction Equipment				
Equipment		**PPV at 25 ft. (in/sec)**	**PPV at 100 ft. (in/sec)[1]**	**PPV at 160 ft. (in/sec)[1]**
Pile Driver (Impact)	upper range	1.158	0.252	0.150
	typical	0.644	0.140	0.084
Pile Driver (Sonic)	upper range	0.734	0.160	0.095
	typical	0.17	0.037	0.022
Clam shovel drop		0.202	0.044	0.026
Hydromill (slurry wall)	in soil	0.008	0.002	0.001
	in rock	0.017	0.004	0.002
Vibratory Roller		0.210	0.046	0.027
Hoe Ram		0.089	0.019	0.012
Large bulldozer		0.089	0.019	0.012
Caisson drilling		0.089	0.019	0.012
Loaded trucks		0.076	0.017	0.010
Jackhammer		0.035	0.008	0.005
Small bulldozer		0.003	0.001	0.000

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, October 2018 as modified by Illingworth & Rodkin, Inc., October 2019.

[1]These levels calculated assuming normal propagation conditions, using a standard equation of *PPVeqmt-PPVref * (25/D) 1.5*, from FTA, May 2006.

Vibration levels at the nearest industrial building, located 100 feet south of the project site, would be below 0.5 in/sec PPV from all construction activity. Vibration levels would be lower in farther locations. Therefore, the project would have a less than significant impact. **(Less than Significant Impact)**

Impact NOI-3: The project would not be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport. The project would not expose people residing or working in the project area to excessive noise levels. **(Less than Significant Impact)**

Norman Y. Mineta San José International Airport is a public-use airport located approximately 0.3 mile east of the project site. Although aircraft-related noise is occasionally audible at the project site, noise from aircraft would not substantially increase ambient noise levels. The project site lies inside the 65 dBA CNEL 2017 and 2037 noise contours shown in the Norman Y. Mineta San José International Airport Environmental Impact Report published in February 2020. Exterior and interior noise levels resulting from aircraft would be compatible with the proposed project. Therefore, there would be a less than significant impact. **(Less than Significant Impact)**

4.14 POPULATION AND HOUSING

4.14.1 Environmental Setting

4.14.1.1 *Regulatory Framework*

State

Housing-Element Law

State requirements mandating that housing be included as an element of each jurisdiction's general plan is known as housing-element law. The Regional Housing Need Allocation (RHNA) is the state-mandated process to identify the total number of housing units (by affordability level) that each jurisdiction must accommodate in its housing element. California housing-element law requires cities to: 1) zone adequate lands to accommodate its RHNA; 2) produce an inventory of sites that can accommodate its share of the RHNA; 3) identify governmental and non-governmental constraints to residential development; 4) develop strategies and a work plan to mitigate or eliminate those constraints; and 5) adopt a housing element and update it on a regular basis.[54]

The City of Santa Clara Housing Element and related land use policies were last updated in December of 2014.

Regional and Local

Plan Bay Area 2040

Plan Bay Area 2040 is a long-range transportation, land-use, and housing plan intended to support a growing economy, provide more housing and transportation choices, and reduce transportation-related pollution and GHG emissions in the Bay Area.[55] Plan Bay Area 2040 promotes compact, mixed-use residential and commercial neighborhoods near transit, particularly within identified Priority Development Areas (PDAs).[56]

ABAG allocates regional housing needs to each city and county within the nine-county San Francisco Bay Area, based on statewide goals. ABAG also develops forecasts for population, households, and economic activity in the Bay Area. ABAG, MTC, and local jurisdiction planning staff created the Regional Forecast of Jobs, Population, and Housing, which is an integrated land use and transportation plan through the year 2040 (upon which Plan Bay Area 2040 is based).

[54] California Department of Housing and Community Development. "Regional Housing Needs Allocation and Housing Elements" Accessed April 27, 2018. http://hcd.ca.gov/community-development/housing-element/index.shtml.
[55] Association of Bay Area Governments. Plan *Bay Area 2040 Final.* July 2017.
[56] Association of Bay Area Governments and Metropolitan Transportation Commission. "Project Mapper." http://projectmapper.planbayarea.org/.

4.14.1.2 *Existing Conditions*

According to the California Department of Finance data, the City had a population of approximately 129,604 residents as of January 1, 2018.[57] The Association of Bay Area Governments projects the Santa Clara population to be 135,000 in 2025.[58]

The job/housing ratio quantifies the relationship between the number of housing units required as a result of local jobs and the number of residential units available in the City. When the ratio reaches 1.0, a balance is struck between the supply of local housing and local jobs. The jobs/housing ratio is determined by dividing the number of local jobs by the number of employed residents that can be housed in local housing. The City of Santa Clara has fewer employed residents than jobs with a ratio of approximately two jobs per employed resident.[59] Accordingly, most employees within the City are required to seek housing outside of the community. ABAG estimates that the City of Santa Clara had 112,460 jobs in 2010 and will have 145,560 jobs by 2040.[60]

The project site is developed with two industrial buildings, approximately 158,000 square feet each, with associated parking. The buildings were formerly owned by Hitachi, Ltd. and are not currently in use. Previously, major operations conducted at the facility consisted of software development and administrative support services. There are no residences on-site.

4.14.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
2) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

[57] State of California, Department of Finance, E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2017 and 2018. May 2018.
[58] Association of Bay Area Governments: Plan Bay Area Projections 2013. December 2013.
[59] Based on the ABAG-projected 106,750 jobs in 2010 and Santa Clara General Plan Housing Element.
[60] Association of Bay Area Governments. *2010-2040 Jobs Housing Connection Strategy.* Page 97. May 17, 2012.

Impact POP-1:	The project would not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). **(Less than Significant Impact)**

The project would demolish the two existing industrial buildings on the site to construct a 576,120 square foot data center facility. The LDC is anticipated to require a total of 30 to 35 employees. The LBGF would not have any dedicated employees. The project would be a low employment generating use; therefore, approval of the project would not substantially increase jobs in the City. The proposed project would not induce substantial population growth in the City or substantially alter the City's job/housing ratio. Therefore, the data center project would result in a less than significant impact. **(Less than Significant Impact)**

Impact POP-2:	The project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. **(No Impact)**

The existing project site does not include residents or housing units and, therefore, the project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. **(No Impact)**

4.15 PUBLIC SERVICES

4.15.1 Environmental Setting

4.15.1.1 *Regulatory Framework*

State

Government Code Section 66477

The Quimby Act (included within Government Code Section 66477) requires local governments to set aside parkland and open space for recreational purposes. It provides provisions for the dedication of parkland and/or payment of fees in lieu of parkland dedication to help mitigate the impacts from new residential developments. The Quimby Act authorizes local governments to establish ordinances requiring developers of new residential subdivisions to dedicate parks, pay a fee in lieu of parkland dedication, or perform a combination of the two.

Government Code Section 65995 through 65998

California Government Code Section 65996 specifies that an acceptable method of offsetting a project's effect on the adequacy of school facilities is the payment of a school impact fee prior to the issuance of a building permit. Government Code Sections 65995 through 65998 set forth provisions for the payment of school impact fees by new development by "mitigating impacts on school facilities that occur (as a result of the planning, use, or development of real property" (Section 65996[a]). The legislation states that the payment of school impact fees "are hereby deemed to provide full and complete school facilities mitigation" under CEQA (Section 65996[b]).

Developers are required to pay a school impact fee to the school district to offset the increased demands on school facilities caused by the proposed residential development project. The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Regional and Local

Countywide Trails Master Plan

The Santa Clara County Trails Master Plan Update is a regional trails plan approved by the Santa Clara County Board of Supervisors. It provides a framework for implementing the County's vision of providing a contiguous trail network that connects cities to one another, cities to the county's regional open space resources, County parks to other County parks, and the northern and southern urbanized regions of the County. The plan identifies regional trail routes, sub-regional trail routes, connector trail routes, and historic trails.[61]

[61] Santa Clara County. *Santa Clara County Countywide Trails Master Plan Update*. November 1995.

4.15.1.2 *Existing Conditions*

Fire Service

Fire protection services for the project site are provided by the City of Santa Clara Fire Department (SCFD). The SCFD consists of 10 stations consisting of eight engines, two trucks, two ambulances, one rescue/light unit, one hazardous materials unit, and one command vehicle.[62] The closest fire station to the project site is Station 2, located at 1900 Walsh Avenue, which is 0.9 miles west of the project site.

The SCFD responds to all emergencies within six minutes, 90 percent of the time.[63]

Police Service

Police protection services are provided by the City of Santa Clara Police Department (SCPD). The SCPD consists of 239 full-time employees and a varying number of part-time or per diem employees, community volunteers, Police Reserves and Chaplains. Police headquarters are located at 601 El Camino Real, approximately two miles south of the project site.[64]

The General Plan identifies a public service goal to maintain the SCPD response time average of three minutes for all areas of the City.[65]

Parks, Schools, and Libraries

The nearest public parks to the project site are Larry J. Marsalli Park, located at 1425 Lafayette Street, approximately one mile south of the site; Rotary Park, located at 1490 Don Avenue, approximately two miles southwest of the site; and Montague Park, located at 3595 MacGregor Lane, approximately two miles north of the site.

The nearest public schools to the project site are Scott Lane Elementary School, located at 1925 Scott Boulevard, 1.7 miles southwest of the site; Buchser Middle School, located at 1111 Bellomy Street, approximately 2.5 miles south of the site; and Santa Clara High School, located at 3000 Benton Street, 3.7 miles southwest of the site. The nearest private school to the site is the Granada Islamic School, located at 3003 Scott Boulevard, 1.2 miles northwest of the site.

The nearest library to the project site is the Northside Branch Library, located at 695 Moreland Way, 2.7 miles north of the site.

[62] City of Santa Clara Fire Department. "About Us." http://santaclaraca.gov/government/departments/fire/about-us. Accessed on October 17, 2018.
[63] City of Santa Clara. "Emergency Services." http://santaclaraca.gov/residents/emergency-services. Accessed October 17, 2019.
[64] City of Santa Clara Police Department. "About Us." http://santaclaraca.gov/government/departments/police-department/about-us. Accessed on October 17, 2019.
[65] City of Santa Clara. *City of Santa Clara 2010-2035 General Plan*. Section 5.9.3. November 2010.

4.15.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1) Fire Protection?	☐	☐	☒	☐
2) Police Protection?	☐	☐	☒	☐
3) Schools?	☐	☐	☐	☒
4) Parks?	☐	☐	☒	☐
5) Other Public Facilities?	☐	☐	☐	☒

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact PS-1:	The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services. **(Less than Significant Impact)**

The project site is currently served by the SCFD. The proposed project may result in an incremental increase in the need for fire services associated with increased building area but would not require the construction of new facilities or stations.

The project would be constructed in conformance with current building and fire codes, and the SCFD would review project plans to ensure appropriate safety features are incorporated to reduce fire hazards. The potential incremental increase in fire protection services would not require new or expanded fire protection facilities, the construction of which could cause significant environmental impact, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services. **(Less than Significant Impact)**

Impact PS-2:	The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services. **(Less than Significant Impact)**

The project site is currently served by the SCPD. The LDC may result in an incremental increase in the need for police services associated with increased building area and employees but would not require the construction of new facilities or stations.

The Police Department would review the final site design, including proposed landscaping, access, and lighting, to ensure that the project provides adequate safety and security measures. The potential incremental increase in police protection services would not require new or expanded police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for police protection services. **(Less than Significant Impact)**

Impact PS-3:	The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools. **(No Impact)**

The proposed project would not generate substantial population growth in the project area or result in the use of public facilities in the area by new residents. The project proposes a data center facility, not a residential use, and would therefore not generate students. The project, therefore, would not require new or expanded school facilities, the construction of which could cause environmental impacts. **(No Impact)**

Impact PS-4:	The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks. **(Less than Significant Impact)**

The proposed project would not generate substantial population growth in the project area or result in the use of public facilities in the area by new residents. Some LDC employees at the project site may visit local parks; however, this use would not create the need for any new facilities or adversely impact the physical condition of existing facilities. **(Less than Significant Impact)**

Impact PS-5:	The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities. **(No Impact)**

The proposed project would not generate substantial population growth in the project area or result in the use of public facilities in the area by new residents. Some LDC employees at the project site may visit nearby libraries; however, this would not create the need for any new facilities or adversely impact the physical condition of existing facilities. **(No Impact)**

4.16 RECREATION

4.16.1 Environmental Setting

4.16.1.1 *Regulatory Framework*

State

Government Code Section 66477

The Quimby Act (included within Government Code Section 66477) requires local governments to set aside parkland and open space for recreational purposes. It provides provisions for the dedication of parkland and/or payment of fees in lieu of parkland dedication to help mitigate the impacts from new residential developments. The Quimby Act authorizes local governments to establish ordinances requiring developers of new residential subdivisions to dedicate parks, pay a fee in lieu of parkland dedication, or perform a combination of the two.

Local

The City of Santa Clara Parks & Recreation Department provides parks and recreational services in the City. The Department is responsible for maintaining and programming the various parks and recreation facilities and works cooperatively with public agencies in coordinating all recreational activities within the City. Overall, as of June 2017, the Department maintains and operates Central Park (45.04-acre community park), 25 neighborhood parks (122.67 acres), four mini parks (2.59 acres), public open space (56.21 acres total: 16.13 acres improved and 40.08 acres unimproved), recreational facilities (23.8 acres total: 14.76 acres improved and 9.04 acres unimproved, excluding Santa Clara Golf and Tennis Club/BMX), recreational trails (7.59 acres), and joint use facilities (48.52 acres) throughout the City, totaling approximately 257.3 improved acres. In general, community parks total over 15 acres, neighborhood parks range between one to 15 acres, and mini parks are typically less than one acres in size.

The Department of Parks and Recreation also maintains a strong recreational program that supports a wide variety of activities. The Community Recreation Center is the hub of the City's recreational programs. The area in Central Park, west of Saratoga Creek, contains group and individual picnic facilities, playgrounds, restroom facilities, an amphitheater, two lighted tennis courts, basketball courts, and the Veterans Memorial. East of the creek is the world famous George F. Haines International Swim Center, open space, a lake, large group picnic areas, restroom facilities, a lawn bowling green, an exercise course, the Bob Fatjo Sports Center, which includes the Tony Sanchez Field as well as a lighted softball field, and the Santa Clara Tennis Center, which includes eight lighted tennis courts as well as a practice wall.[66]

In addition to the parklands and facilities within Central Park, the City currently has a gymnastics center, a bicycle track, a dog park, a golf and tennis club, a youth activity center, a teen center, a senior center, and a skate park. The City's recreational system is augmented by local school facilities, which are available to the general public after school hours.

[66] City of Santa Clara. Parks: Central Park. http://santaclaraca.gov/Home/Components/ServiceDirectory/ServiceDirectory/318/2654. Accessed on May 31, 2019.

4.16.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated?	☐	☐	☒	☐
2) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact REC-1:	The project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. **(Less than Significant Impact)**

The proposed project would not increase employment substantially. Some LDC employees may use nearby parks and recreational facilities; however, this would not have an impact on these facilities such that adverse physical effects would result. **(Less than Significant Impact)**

Impact REC-2:	The project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. **(Less than Significant Impact)**

The proposed project would not include recreational facilities. Some LDC employees may use nearby parks and recreational facilities; however, this would not require the construction or expansion of recreational facilities. **(Less than Significant Impact)**

4.17 TRANSPORTATION/TRAFFIC

4.17.1 Environmental Setting

4.17.1.1 *Regulatory Framework*

State

Regional Transportation Plan

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 ABAG adopted Plan Bay Area 2040 in July 2017, which includes a Regional Transportation Plan to guide regional transportation investment for revenues from federal, state, regional and local sources through 2040.

Senate Bill 743

SB 743 establishes criteria for determining the significance of transportation impacts using a vehicle miles traveled (VMT) metric intended to promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. Specifically, SB 743 requires the replacement of automobile delay—described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion—with VMT as the recommended metric for determining the significance of transportation impacts. The Governor's Office of Planning and Research (OPR) approved the CEQA Guidelines implementing SB 743 on December 28, 2018. Local jurisdictions are required to implement a VMT policy by July 1, 2020.

Regional and Local

Congestion Management Program

VTA oversees the Congestion Management Program (CMP), which is aimed at reducing regional traffic congestion. The relevant state legislation requires that urbanized counties in California prepare a CMP in order to obtain each county's share of gas tax revenues. State legislation requires that each CMP define traffic LOS standards, transit service standards, a trip reduction and transportation demand management plan, a land use impact analysis program, and a capital improvement element. VTA has review responsibility for proposed development projects that are expected to affect CMP-designated intersections.

4.17.1.2 *Regional and Local Roadway Access*

Regional access to the project site is provided by US 101 and the Central Expressway.

Local access to the project site is provided by the following roadways:

Lafayette Street is a north/south four-to-five-lane arterial road in the vicinity of the site. It extends from Alviso in North San Jose to Poplar Street in Santa Clara. North of Reed Street, Lafayette Street

operates as a five-lane roadway with two lanes in each direction and a center turn lane. South of Reed Street, Lafayette Street is a four-lane roadway with two lanes in each direction. Lafayette Street is west of the project site and provides direct access to the site.

4.17.1.3 *Existing Transit Service*

Transit service in the area includes local bus service provided by the Santa Clara Valley Transportation Authority (VTA).

Bus Service

The nearest bus stop to the project site is the Walsh Ave and Scott Boulevard stop, approximately 0.7 miles southeast of the project site. Local route 59 provides service to Walsh Ave and Scott Boulevard. Other nearby routes include 21 and 60. [67]

Caltrain and ACE

The Santa Clara Caltrain station is located approximately 1.9 miles south of the project site, near Railroad Avenue and El Camino Real. Caltrain commuter rail service between San Francisco to Gilroy and the Altamont Commuter Express (ACE) rail service between Stockton and San Jose both stop at the Santa Clara Caltrain Station. Caltrain provides service with 15- to 30-minute headways during commute hours. The ACE rail service operates four trains during the morning and afternoon commute periods.

4.17.1.4 *Existing Pedestrian and Bicycle Facilities*

Pedestrian facilities comprise sidewalks, crosswalks, and pedestrian signals. There are sidewalks along the project site's frontage on Lafayette Street and a portion of Central Expressway. There are sidewalks, although intermittent, on other areas of Lafayette Street.

Bicycle facilities comprise 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 designated for bicycle use by striping, pavement legends, and signs. Bicycle routes are roadways designated for bicycle use by signs only. There are no bicycle paths, lanes or routes in the project vicinity.

4.17.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian facilities?	☐	☐	☒	☐

[67] Santa Clara Valley Transportation Authority. *Bus and Rail Map Effective 12.27.19.* Available at: < https://www.vta.org/go/maps > Accessed on December 12, 2019.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
2) For a land use project, conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
3) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?	☐	☐	☒	☐
4) Result in inadequate emergency access?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. Where impacts associated with each facility differ, they are referred to individually as the "LBGF" or the "LDC".

Impact TRN-1: The project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian facilities. **(Less than Significant Impact)**

Vehicle Trips

The LBGF would not generate regular vehicle trips other than occasional trips associated with maintenance activity and, therefore, would not result in impacts related to vehicle trips.

The LDC would have low employment intensity and would not generate substantial vehicle trips. Trip generation rates for the project were based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, Tenth Edition's trip generation rates for data centers (land use code 160), which use rates based on actual survey data. Based on ITE rates, the project would generate an estimated total of 86 weekday AM peak hour trips and 75 weekday PM peak hour trips. The LDC would result in less than 100 peak hour trips and, therefore, would not significantly impact adjacent roadways or result in transportation level of service impacts to signalized intersections or freeway segments. As a result, the LDC would not conflict with the CMP.

The LDC would be required to comply with General Plan Policy 5.8.5-P1, which requires new development to implement TDM programs that can include site-design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage and recreational facilities. With implementation of the TDM program, the project would reduce the number of trips generated. With the trip reduction from the required TDM program, in combination with the nominal addition of trips to roadways during peak hours, the LDC would result in a less than significant impact associated with vehicle trips.

Bicycle and Pedestrian Facilities

There are sidewalks on the site's western and northern frontage. Crosswalks on Lafayette Street and Central Expressway provide connections across Lafayette Street and Central Expressway. The

project would not change these existing connections, consistent with Complete Streets design standards. The project, therefore, would not conflict with pedestrian circulation in the area.

The proposed project would continue to provide two driveways in the same location on the site. Thus, the project would not conflict with bicyclists, as there are no bike lanes on Lafayette Street or Central Expressway in the project vicinity.

Transit Facilities

VTA, Caltrain, and ACE provide transit service within the project vicinity. The nearest bus stop to the project site is the Scott Boulevard and Walsh Avenue stop, approximately 0.7 miles southwest of the project site. Local routes 21, 59, and 60 provide bus service to the Scott and Walsh bus stop. There are limited pedestrian pathways connecting the project site to the bus stop.

Due to the low number of employees and visitors expected at the proposed data center, the project would not adversely impact levels of service at nearby transit facilities.

For all these reasons, the project would have a less than significant impact. **(Less than Significant Impact)**

Impact TRN-2:	The project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). **(Less than Significant Impact)**

Section 15064.3(b)(4) of the recently updated CEQA Guidelines replaces auto delay with vehicle miles travelled (VMT) as the primary metric for analyzing a project's transportation impacts. The update gives lead agencies discretion to choose the most appropriate methodology to use to evaluate project-related impacts, provided that any such analysis is consistent with the requirements of CEQA and any other applicable requirements. The City of Santa Clara does not currently have an adopted VMT policy, which will be required by July 1, 2020. This recent change is also intended to allow agencies to continue using vehicle LOS for all projects as part of transportation planning or entitlement review.

The LBGF would not regularly generate VMT other than occasional trips associated with maintenance activity. The operation of the LDC would require relatively few VMT, and the project site is currently developed with an onsite workforce. Additionally, the project would be required to implement a TDM program to reduce vehicle trips. As a result, the LDC is not expected to result in a net increase in VMT per capita on the site. The LDC is not a growth-inducing project that would significantly increase VMT in the project area. **(Less than Significant Impact)**

Impact TRN-3:	The project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). **(Less than Significant Impact)**

The site currently has two driveways on Lafayette Street. The project would continue to utilize existing driveways, although one new driveway would be constructed between the two driveways.

This new access point would be gated functioning only as a maintenance access driveway for the proposed substation. From north to south, the driveways would be 40 and 100 feet in width. Project construction or operations would not permanently alter any public roadways or intersections, nor would it introduce a design feature or incompatible uses to the project area. Project construction and operation would occur entirely onsite. Therefore, the project would not increase hazards due to geometric design features of roadways or incompatible use. **(Less than Significant Impact)**

Impact TRN-4:	The project would not result in inadequate emergency access. **(Less than Significant Impact)**

Emergency access would be provided to the site via the two driveways on Lafayette Street. The driveways would provide access to a two-way drive aisle looping around the perimeter of the data center buildings for site circulation and emergency vehicle access. The loop would also provide emergency vehicle access at the substation. The City of Santa Clara standards require two-way driveways providing access to all properties be a minimum width of 22 feet (20-foot pavement with one-foot clearance on each side). From north to south, the driveways along Lafayette Street would be 20 and 100 feet in width. The final site design would be required to be consistent with regulatory requirements for fire truck access. **(Less than Significant Impact)**

4.18 UTILITIES

The following discussion is based in part on a Water Consumption Memo prepared by ESD on March 4, 2020, and a WSA form prepared by the City of Santa Clara on March 2, 2020. These reports are attached together as Appendix G.

4.18.1 Environmental Setting

4.18.1.1 *Regulatory Framework*

State

State Water Code

Pursuant to the State Water Code, water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (approximately 980 million gallons) of water annually must prepare and adopt an urban water management plan (UWMP) and update it every five years. As part of a UWMP, water agencies are required to evaluate and describe their water resource supplies and projected needs over a 20-year planning horizon, water conservation, water service reliability, water recycling, opportunities for water transfers, and contingency plans for drought events. The City of Santa Clara adopted its most recent UWMP in November 2016.

A Water Supply Assessment (WSA) is required pursuant to State Water Code Section 10910 if the project meets certain requirements outline in Section 10912. A WSA is required for:

1. A residential development of more than 500 units;
2. A hotel or motel having more than 500 rooms;
3. A commercial office building employing 1,000 people or having more than 250,000 sq. feet of floor space;
4. An industrial, manufacturing or industrial park planned to house more than 1,000 employees or having more than 650,000 sq. feet of floor space;
5. A mixed use project that contains one or more of the criteria above; or
6. Any project that has a water demand equal to or greater than the amount of water required by a 500 dwelling unit development.

Assembly Bill 939

The California Integrated Waste Management Act of 1989, or AB 939, established the Integrated Waste Management Board, required the implementation of integrated waste management plans, and mandated that local jurisdictions divert at least 50 percent of solid waste generated (from 1990 levels), beginning January 1, 2000, and divert at least 75 percent by 2010. Projects that would have an adverse effect on waste diversion goals are required to include waste diversion mitigation measures.

Assembly Bill 341

AB 341 sets forth the requirements of the statewide mandatory commercial recycling program Businesses that generate four or more cubic yards of garbage per week and multi-family dwellings

with five or more units in California are required to recycle. AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020.

Senate Bill 1383

SB 1383 establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The bill grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that at least 20 percent of currently disposed edible food is recovered for human consumption by 2025.

4.18.1.2 *Existing Conditions*

Water Service

Potable Water

Water services to the site are provided by the City of Santa Clara Department of Water and Sewer Utilities. The water system consists of more than 335 miles of water mains, 27 active water wells and seven storage tanks with 28.8 million gallons of water storage capacity.[68] Drinking water is provided by an extensive underground aquifer (accessed by the City's wells) and by two wholesale water importers: the Santa Clara Valley Water District (imported from the Sacramento-San Joaquin Delta) and the San Francisco Hetch-Hetchy System (imported from the Sierra Nevada). About 30 percent of the City's water comes from these imported treated water supplies. The remaining 70 percent is pumped from the City's system of 26 active water wells.[69] The three sources are used interchangeably or are blended together. In 2015, the Water Utility had approximately 25,715 water service connections with an average potable water demand of 16.8 million gallons per day (MGD) potable water and an average demand of 3.2 MGD recycled water demand.[70]

Recycled Water

Tertiary treated (or 'recycled') water serves as a fourth source of water supply and comprises approximately 16 percent of the City's overall water supply.[71] Recycled water is supplied from South Bay Recycled Water, which provides advanced tertiary treated water from the San Jose—Santa Clara Regional Wastewater Facility (formerly known as the San Jose/Santa Clara Water Pollution Control Plant). The City of Santa Clara recycles approximately one percent of its water through non-potable uses by businesses, industries, parks, and schools along pipeline routes. The City's recycled water program delivers recycled water throughout the City for landscaping, parks, public services and businesses. The nearest recycled water lines are located in Lafayette Street as well as in the western section of Walsh Avenue prior to the intersection at Lafayette.[72]

[68] City of Santa Clara. *2015 Urban Water Management Plan, City of Santa Clara Water Utility*. Page 12. Adopted November 2016. Accessed: November 6, 2019. Available at: http://santaclaraca.gov/index.aspx?page=1984.
[69] *Ibid.*
[70] *Ibid.*
[71] City of Santa Clara. *Water Utility.* Updated July 2012. Accessed: November 6, 2019. http://santaclaraca.gov/government/departments/water-sewer-utilities/water-utility.
[72] City of Santa Clara. *Recycled Water System Map. City of Santa Clara, California.* Updated July 2012. Accessed: November 6, 2019. Available at: http://santaclaraca.gov/home/showdocument?id=14883.

Wastewater

Wastewater from the City of Santa Clara is treated at the San José – Santa Clara Regional Wastewater Facility (RWF). The RWF is owned jointly by the two cities and is operated by the City of San José's Department of Environmental Services. The facility is one of the largest advanced wastewater treatment facilities in California and serves over 1,400,000 people in San José, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno.[73] The Regional Wastewater Facility provides primary, secondary, and tertiary treatment of wastewater and has the capacity to treat 167 million gallons of wastewater a day. Approximately 10 percent of the RWF's effluent is recycled for non-potable uses and the remainder flows into San Francisco Bay. The NPDES permit for RWF includes wastewater discharge requirements.

Wastewater from the existing buildings on-site currently discharges to a 15-inch sanitary sewer line that flows east along Lafayette Street to a 30-inch line and is eventually conveyed to the RWF. Sanitary sewer lines that serve the project site are maintained by the City of Santa Clara Sewer Utility.

Storm Drainage

The City of Santa Clara owns and maintains the municipal storm drainage system which serves the project site. Existing stormwater runoff exits the site into a 15-inch and then 18-inch storm drain line along Lafayette Street. The on-site drainage system is comprised of overland flows, a trench drain, and a pipe network with a diameter of 12-inches to convey the anticipated peak flows that eventually discharge to the Guadalupe River, and ultimately flows to the San Francisco Bay.

Solid Waste

Solid waste collection in the City of Santa Clara is provided by Mission Trail Waste System through a contract with the City. The City has an arrangement with the owners of Newby Island Sanitary Landfill (NISL), located in San José, to provide disposal capacity for the City of Santa Clara through 2024. Recycling services are provided through Stevens Creek Disposal and Recycling.

Electricity and Natural Gas Services

Electric service is provided to the site by Silicon Valley Power and natural gas is provided by Pacific Gas and Electric (PG&E).

[73] City of Santa Clara. *San Jose-Santa Clara Regional Wastewater Facility.*

4.18.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
2) Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
3) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
4) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
5) Be noncompliant with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Note to reader: Where the following analysis applies to both the LBGF and the LDC, the word "project" is used to collectively refer to both facilities. There are no potential impacts associated with the LBGF as all of the potential impacts are associated with the LDC.

Impact UTL-1:	The project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. **(Less than Significant Impact)**

The LBGF would not require new connections to utilities. The LDC would utilize existing connections to connect the City's stormwater, electric, telecommunications, and waste systems. The LDC would incrementally increase the demand on existing facilities in the City of Santa Clara. No relocation of existing or construction of new facilities for these systems are needed to serve the LDC; therefore, there would not be a significant impact.

The City prepared a sanitary sewer model run to determine the capacity of the adjacent pipelines to accommodate the proposed project's sewage. The LDC is anticipated to send 5,965,049 gallons or 18.31 acre-feet of waste to the sanitary sewer utility service per year of operation, as explained below under Impact UTL-2.

The LDC would include construction of a new 90 megavolt amps (MVA) electrical substation in the eastern portion of the site to provide electric power to the proposed data center. The three-bay substation (three 30 MVA 60 kilovolts-12 kilovolts step-down transformers) would connect to existing 60 kilovolts overhead lines on the eastern side of the site, parallel to the Union Pacific railroad tracks. The impacts associated with construction of the substation have been incorporated into the construction assumptions for the project that have been analyzed throughout this application.

PG&E owns natural gas distribution facilities within the City of Santa Clara. The LDC would incrementally increase natural gas use but would not require the construction of any additional off-site facilities. **(Less than Significant Impact)**

Impact UTL-2:	The project would not have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. **(Less than Significant Impact)**

The LBGF would not require water supply. The LDC would be limited to a water consumption of 67 acre-feet per year (AFY). This water would mostly be consumed by the plumbing and mechanical systems. Of the 67 AFY, approximately 18.3 AFY would be blowdown, which refers to flushing high mineral concentration water while replacing it with fresh water. The remaining 48.7 AFY of water are evaporated.

Peak water demand and total annual water consumption would not be achieved when the facility is initially built. It is anticipated that two data halls would be built out and operated each year. Thus, it is estimated that the LDC would not require the anticipated total peak water demand of 1,407 gallons per minute (GPM) until 2027, as reflected in Table 4.18-1 below.

Table 4.18-1: Anticipated Water Demand and Annual Ramp Schedule

Year	Number of Data Halls Online	Andiabatic Transition On/Off Setpoint	Anticipated Total Peak Water Demand (GPM)	Anticipated Total Peak Blowdown (GPM)	Annual Water Consumption (AFY)	Annual Water Blowdown (AFY)
2022	2	67	255.82	66.36	11.84	3.32
2023	4	67	511.64	132.73	23.68	6.65
2024	6	67	767.45	199.09	35.53	9.98
2025	8	67	1,023.27	265.45	47.37	13.31
2026	10	67	1,279.09	331.82	59.21	16.64
2027	11	67	1,407	365	65.13	18.3

*Mechanical evaporative heat rejection plant water consumption is limited to prohibit exceeding the 67.8 acre-feet/year limit by managing the adiabatic transition setpoint.
**Values in table are based on TMY3 weather data. Anticipated peak demand of 1,454.6 GPM is based on the design ambient temperature, which is higher than the data points included in the TMY3 weather data.

The City has determined that the projected increase in water demand associated with the proposed LDC is consistent with the growth projections and future water demand assumed in the preparation and analysis of the City's 2015 Urban Water Management Plan (UWMP).[74] As such, there is sufficient water supply to serve the project site under normal water year (non-drought) conditions.

Additionally, Appendix G includes an analysis demonstrating that the LDC's water use does not trigger the requirement for an WSA. For all these reasons, implementation of the LDC would not have a significant impact on existing or future water supplies. **(Less than Significant Impact)**

Impact UTL-3:	The project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. **(Less than Significant Impact)**

The RWF has the capacity to treat 167 million gallons of wastewater per day.[75] Currently, the RWF is operating under a 120 million gallon per day dry weather effluent flow constraints. With implementation of the LDC, the RWF would still operate below the required 120 million gallons per day constraint given the wastewater generated would not exceed 5,965,049 gallons per year, which equates to an average of 16,342 gallons per day, and would not increase the need for wastewater treatment beyond the capacity of the RWF. **(Less than Significant Impact)**

Impact UTL-4:	The project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. **(Less than Significant Impact)**

The Newby Island Landfill, located in San José, has an agreement with the City to provide disposal capacity through 2024. On a tons-per-day basis, the Newby Island Landfill has spare daily capacity of 860 tons. There is no specific solid waste generation rates for public storage facilities. On a day to day basis, it can be assumed that waste generation is minimal and associated with the on-site office. Nevertheless, when customers clean out their storage facilities, it is likely that some waste is generated.

Based on data from CalRecycle, a generic manufacturing/warehouse facility would generate approximately 1.42 pounds of solid waste per 100 square feet of building area per day.[76] Using this rate, the new building on-site would generate approximately 735 pounds of waste per day. This is a very conservative estimate and represents approximately 0.04 percent of Newby Island's excess daily capacity. In addition, the City of Santa Clara continues to exceed its waste diversion goal of 50 percent, which would result in an even smaller contribution.

If the Newby Island Landfill is not available to accept waste after 2024, the City shall prepare a contract with another landfill with capacity, such as Guadalupe Mines in San José, which is not

[74] City of Santa Clara. "2015 Urban Water Management Plan." November 22, 2016.
[75] City of San José. San José-Santa Clara Regional Wastewater Facility. Accessed: November 8, 2019. Available at: http://sanjoseca.gov/index.aspx?nid=1663.
[76] CalRecycle. "Estimated Solid Waste Generation Rates". Accessed July 24, 2019. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates

anticipated to close until 2048. Because the project can be served by a landfill with capacity and would not result in a significant increase in solid waste or recyclable materials, the project's impacts related to solid waste would be less than significant. **(Less than Significant Impact)**

Impact UTL-5:	The project would not be noncompliant with federal, state, and local management and reduction statutes and regulations related to solid waste. **(Less than Significant Impact)**

The construction and operation of the project would comply with federal, state, and local regulations related to diversion of materials from disposal and appropriate disposal of solid waste. **(Less than Significant Impact)**

4.19 WILDFIRE

4.19.1 Environmental Setting

The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.[77]

4.19.2 Checklist and Discussion of Impacts

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

The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones; therefore, the project would not result in wildfire impacts. **(No Impact)**

[77] State of California Department of Forestry and Fire Protection. Santa Clara County Fire Hazard Severity Zones in SRA. Adopted November 7, 2007.

4.20 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
2) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
3) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Impact MFS-1: The project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

The project would not result in significant impacts to the environment and, therefore, would not have the potential to substantially degrade the quality of the environment.

The project is located in an urban area and is largely devoid of sensitive biological resources. Mitigation measures included in the project would ensure impacts to nesting birds are reduced to less than significant levels. The project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal.

There are no known historic, cultural, or tribal resources on or adjacent to the site. The project includes mitigation measures to reduce potential impacts to unknown buried resources on the site, should they be encountered, to less than significant levels. The project, therefore, would not eliminate important examples of the major periods of California history or prehistory. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Impact MFS-2:	The project does not have impacts that are individually limited, but cumulatively considerable. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

A number of projects have been recently approved, reasonably foreseeable, or are under development in the City of Santa Clara in the vicinity of the project site. These include the development or redevelopment of residential, industrial, and office uses. While these individual projects may result in significant impacts in particular issue areas, it is assumed that the projects will comply with existing regulations and statutes, and will incorporate measures to reduce potential impacts to a less than significant level, if necessary. For example, all projects are required to incorporate best management practices and comply with local and regional regulations to reduce impacts to water quality to the maximum extent feasible. With the proposed project's adherence to the Land Use, Air Quality, Energy, and Water Policies described in the City's General Plan, project impacts would not contribute to cumulatively considerable impacts. Given the project's location and proposed operation, areas of particular concern for cumulative impacts are energy, air quality, and GHG emission. These impact areas are discussed in further detail below.

Energy

Energy impacts are cumulative in nature in that they are tied to local and regional energy supplies. Electricity for the proposed LDC would be provided by Silicon Valley Power (SVP), which is the public electric utility of the City of Santa Clara. Santa Clara currently has ownership interest, or has purchase agreements for 1,268.45 MW of electricity.[78] In 2017, approximately 38 percent of that generation is eligible as renewable (as defined by the California Energy Commission) and an additional 34 percent is otherwise a non-GHG emitting resource (i.e. large-hydroelectric).[79] This capacity far exceeds City of Santa Clara's current peak electricity demand of approximately 526.2 MW. No new generation peak capacity is necessary to meet the capacity requirements of new construction, or redeveloped facilities within the City to meet the near or projected future demand. Additionally, the LBGF would not have a significant adverse effect on local or regional diesel fuel supplies and will not create a significant adverse impact on California's energy resources.

Air Quality

Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air

[78] Silicon Valley Power, City of Santa Clara. The Silicon Valley Power Resources Map. Accessed: April 9, 2020. Available at: http://www.siliconvalleypower.com/home/showdocument?id=5763.
[79] Silicon Valley Power. "Power Content Label". Accessed: April 9, 2020. Available at: http://siliconvalleypower.com/svp-and-community/about-svp/power-content-label

quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. As described in Section 4.3 Air Quality, with the incorporation of mitigation measures into the project, including offsets that must be provided for NO_x or VOC, the total increase in average daily emissions of criteria pollutants from operation of the project and cumulative air toxics health hazards are estimated to be below the significance thresholds used by BAAQMD and the CEC. Therefore, with implementation of mitigation measures included in the project, the project would not result in a cumulative air quality impact.

Greenhouse Gas Emissions

Similar to regulated air pollutants, GHG emissions and global climate change also represent cumulative impacts. The project's contribution to global climate change is discussed in Section 4.8 Greenhouse Gas Emissions in terms of the project's GHG emissions. With implementation of the efficiency measures included in the project in combination with the power mix utilized by SVP, the project would not conflict with plans, policies or regulation adopted for the purpose of reducing the emissions of GHGs.

Impact MFS-3:	The project does not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Consistent with Section 15065(a)(4) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has the potential to cause substantial adverse effects on human beings, either directly or indirectly. Under this standard, a change to the physical environment that might otherwise be minor must be treated as significant if people would be significantly affected. This factor relates to adverse changes to the environment of human beings generally, and not to effects on particular individuals. While changes to the environment that could indirectly affect human beings would be represented by all of the designated CEQA issue areas, those that could directly affect human beings include construction air quality and hazardous materials. However, implementation of mitigation measures and General Plan policies would reduce these impacts to a less than significant level. No other direct or indirect adverse effects on human beings have been identified. **(Less Than Significant Impact)**

4.21 ENVIRONMENTAL JUSTICE

4.21.1 Environmental Setting

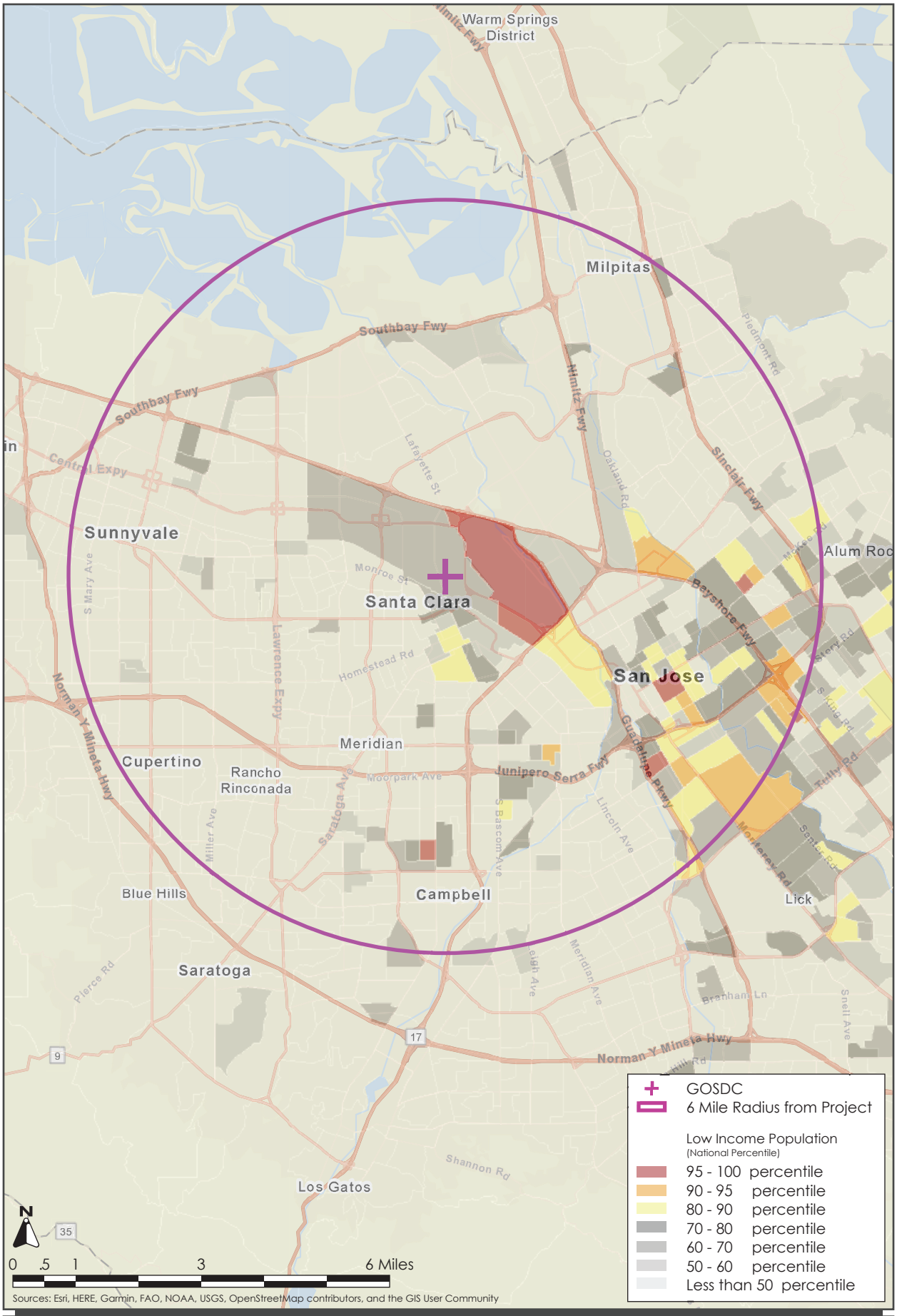
Based on California Department of Education data shown in Table 4.21-1 and depicted in Figure 4.21-1, the percentage of those living in the school districts of Campbell Union, San Jose Unified, Santa Clara Unified, and Luther Burbank (in a six-mile radius of the project site) and enrolled in the free or reduced price meal program is larger than those in the reference geography, i.e. the County as a whole, and thus are considered an EJ population based on a low income population as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

Table 4.21-1: Low Income Data within the Project Area

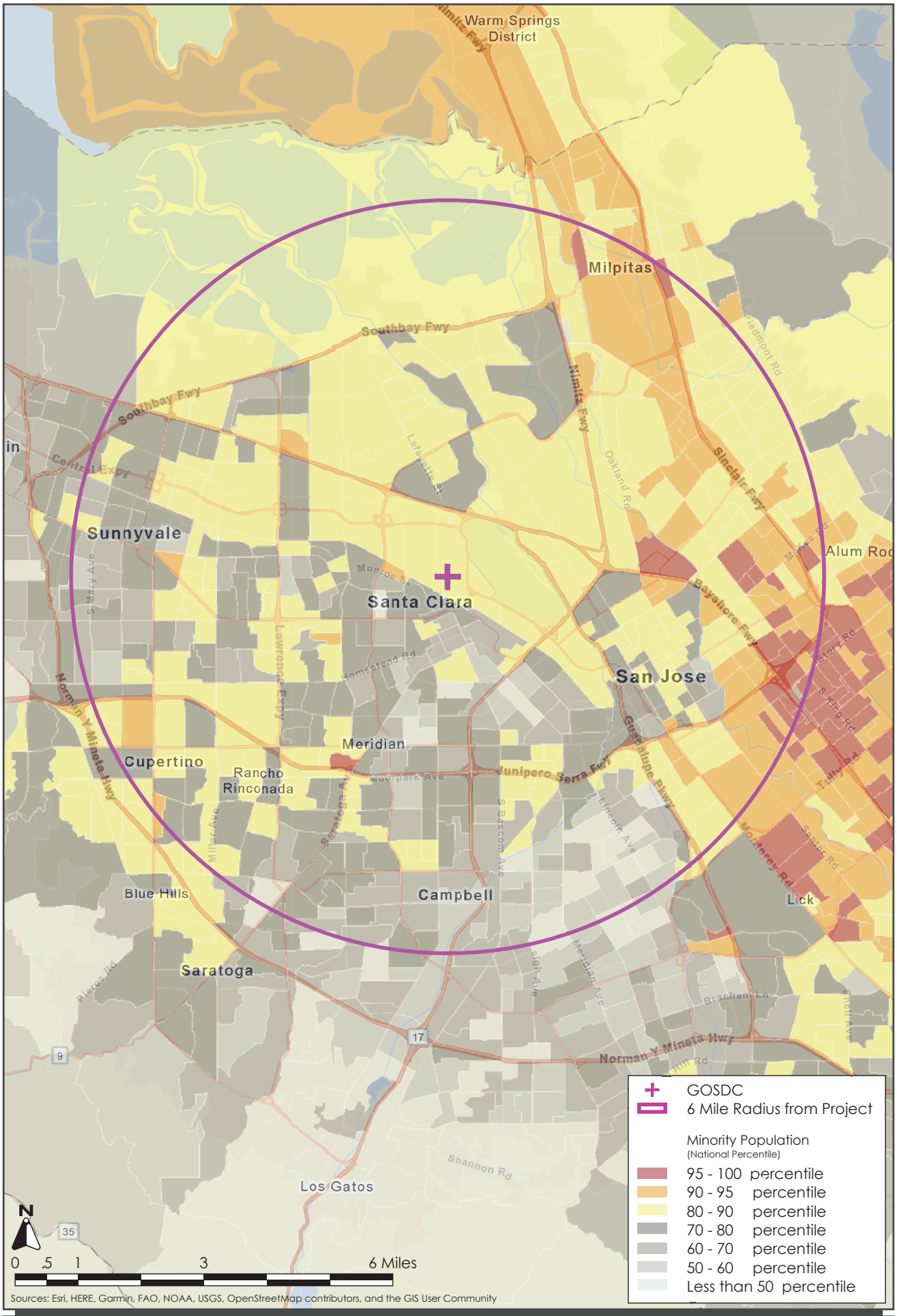
School Districts in Six Mile Radius	Enrollment Used for Meals	Free or Reduced Price Meals	
Berryessa Union Elementary	6,988	2,170	31.7%
Cambrian	3,471	553	16.2%
Campbell Union	7,273	3,179	39.3%
Cupertino Union	17,363	1,021	5.5%
Luther Burbank	516	434	84.1%
Milpitas Unified	10,172	3,181	33.7%
Moreland	4,703	1,284	29.5%
San Jose Unified	31,042	13,270	49.4%
Santa Clara Unified	15,387	5,638	39.7%
Sunnyvale	6,664	2,215	34.6%
Reference Geography			
Santa Clara County	255,418	89,502	35.1%

Source: California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2018-2019, http://dq.cde.ca.gov/dataquest/

Figure 4.21-2 shows 2010 census blocks in a six-mile radius of LDC and LBGF (together, project) with a minority population greater than or equal to 50 percent (US Census 2010). The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the United States Environmental Protection Agency's Guidance on Considering Environmental Justice During the Development of Regulatory Actions (US EPA 2015).



LOW INCOME POPULATION DISTRIBUTION | FIGURE 4.22-1



MINORITY POPULATION DISTRIBUTION | FIGURE 4.22-2

4.21.2 Environmental Impacts

The following technical areas discuss impacts to EJ populations: Aesthetics, Air Quality, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Population and Housing, Transportation and Traffic, Tribal Cultural Resources, Utilities and Service Systems, and Mandatory Findings of Significance.

Aesthetics. *NO IMPACT*. EJ populations may experience disproportionate visual impacts if the siting of visually intrusive or degrading projects, particularly industrial facilities, occurs within or near EJ communities to a greater extent than within the community at large.

As depicted in Figure 4.21-2, the project site is located in an area with a high minority population. However, as stated in the Aesthetics section, the proposed buildings would be visually similar to the surrounding land uses which primarily include heavy industrial and commercial and would be compatible with the mixed visual character and quality of the surrounding area. In addition, the proposed buildings and site improvements would be subject to the City of Santa Clara's design review process to ensure that the project would not adversely affect the visual quality of the project area and would conform to current architectural and landscaping standards. Implementation of the proposed project would not substantially degrade the existing visual quality or character of the site or its surroundings and, therefore, would not have the potential to adversely affect the high minority population in which the project site is located.

As depicted Figure 4.21-1, the project site is located approximately 0.5 mile west of the nearest low-income population. This low-income population area would not fall within the project's foreground viewshed or visual sphere of influence.

Air Quality. *LESS THAN SIGNIFICANT IMPACT*. The Air Quality section identified the potential public health impacts (i.e. cancer and non-cancer health effects) which could affect the EJ population represented in Figure 4.21-1 and Figure 4.21-2. These potential public health risks were evaluated quantitatively based on the most sensitive population, which includes the EJ population, by conducting a health risk assessment. The results were presented by level of risks. The potential construction and operation risks are associated with exposure to diesel particulate matter (DPM), total organic gases (TOG) in diesel exhaust, and evaporative and exhaust TOGs from gasoline vehicles. The toxic air contaminants (TACs) from TOG include 1,3-Butadiene, Acetaldehyde, Benzene, Ethylbenzene, Formaldehyde, n-Hexane, Methanol, Methyl Ethyl Ketone, Napthalene, Propylene, Styrene, Toluene, and Xylene. The analysis determined that no one (including the public, off-site nonresidential workers, recreational users, and EJ populations) would experience any acute or chronic cancer or non-cancer effects of health significance during construction and operation of the project. Therefore, construction and operation of the project would not cause significant adverse direct or indirect public health impacts from the project's toxic air emissions and no additional mitigation is needed. Likewise, the project would not cause disproportionate public health impacts on sensitive populations, such as the EJ population represented in Figure 4.21-1 and Figure 4.21-2.

The air quality analysis considers the most sensitive and most protective of the population which includes the EJ population, therefore the conclusions of the analysis would include that of the EJ population. Project impacts were evaluated and it was concluded that air quality impacts during the construction of the project would be less than significant with mitigation incorporated and air quality

impacts for all criteria pollutants during operation of both the LDC and LBGF would be less than significant. Both construction and operational emissions from the project would not cause or contribute to a violation of any state or federal ambient air quality standard, or conflict with applicable plans and programs to attain or maintain ambient air quality. Based on these conclusions, the project would not cause disproportionate air quality impacts for sensitive populations like the EJ population represented in Figure 4.21-1 and Figure 4.21-2.

Hazards and Hazardous Materials. *LESS THAN SIGNIFICANT IMPACT*. EJ populations may experience disproportionate hazards and hazardous materials impacts if the storage and use of hazardous materials within or near EJ communities occur to a greater extent than within the community at large. A disproportionate impact upon the EJ population resulting from the planned storage and use of hazardous materials on the site is extremely low probability. Diesel fuel to run the emergency generators is the hazardous material that the project site would have in greatest quantity. The total quantity would be divided up and stored in many separate double-walled containers with proper spill controls. Therefore, the likelihood of a spill of sufficient quantity to impact the surrounding community and EJ population would be very unlikely and is considered less than significant.

Hydrology and Water Quality. *LESS THAN SIGNIFICANT IMPACT*. A disproportionate hydrologic or water quality impact on an EJ population could occur if a project required substantial groundwater resources or contributed significantly to surface water or groundwater quality degradation.

As determined in the Hydrology and Water Quality section, the project would not require substantial groundwater resources. The project is not expected to contribute significantly to surface water or groundwater degradation. The project would be required to comply with the Clean Water Act by controlling the discharge of pollutants in storm water during its construction and operation phases. The project would implement modern operational phase storm water controls that would improve upon the site's existing storm water discharge controls. The project is therefore expected to provide a long-term water quality benefit and would not result in a disproportionate impact to the local EJ population. The project's hydrology and water quality impacts would be reduced to less than significant for all the area's population, including the EJ population.

Land Use and Planning. *NO IMPACT*. A disproportionate land use impact on an EJ population could occur if a project would physically divide the established community of an EJ population or if a project near an EJ population would conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental impacts on a population.

The project would not divide an existing community, as the site is on land designated and zoned for industrial uses and is generally surrounded by industrial uses and commercial uses. The project would be consistent with the City of Santa Clara General Plan land use designation and with approval of the zoning administrator minor modification to allow a building height increase up to 25 percent; the project would be consistent with the zoning district. No conflicts with plans, policies, or related land use regulations would occur.

The project would not pose significant individual impacts relating to land use and planning; therefore, no disproportionate impacts on the EJ population would occur either.

Noise. *LESS THAN SIGNIFICANT IMPACT*. EJ populations may experience disproportionate noise impacts if the siting of unmitigated industrial facilities occurs within or near EJ communities to a greater extent than within the community at large. As depicted in Figure 4.21-1 and Figure 4.21-2, the project site is within an area having an EJ population. Because the area surrounding the site is primarily industrial and warehouse commercial uses, potential impacts would not be disproportionate.

Demolition and construction activities would increase existing noise levels at the adjacent commercial and industrial land uses, but they would be temporary and intermittent. In addition, demolition and construction would not occur on weekends and holidays in compliance with the Santa Clara City Code, Section 9.10.040. Therefore, potential noise effects related to demolition and construction would not result in a significant noise impact on the area's population, including the EJ population.

The noise from operating the facility (LDC and LBGF combined) would not exceed the City of Santa Clara's noise limits at the nearest land uses. Therefore, project noise would comply with the City's noise limits, and thus, its noise impacts would be reduced to less than significant for all the area's population, including the EJ population.

Population and Housing. *LESS THAN SIGNIFICANT IMPACT*. Because the study area used in this analysis for impacts related to population influx and housing supply includes Campbell, Cupertino, Milpitas, San Jose, Sunnyvale, Santa Clara, and Santa Clara County, this analysis considers the project's population and housing impacts on the EJ population living in these geographic areas.

The potential for population and housing impacts is predominantly driven by the temporary influx of nonlocal construction workers seeking lodging closer to a project site. For the project, the construction workers would be drawn from the greater Bay Area and thus would not likely seek temporary lodging closer to the project site. The operations workers are also anticipated to be drawn from the greater Bay Area and would not likely seek housing closer to the project site. If some operations workers were to relocate closer to the project site, there would be sufficient housing in the project area.

A population and housing impact could disproportionately affect an EJ population if the project were to displace minority or low income residents from where they live, causing them to find housing elsewhere. If this occurs, an EJ population may have a more difficult time finding replacement housing due to racial biases and possible financial constraints. As the project would not displace any residents or remove any housing, there would be no disproportionate impact to EJ populations from this project.

Transportation and Traffic. *LESS THAN SIGNIFICANT IMPACT*. Significant reductions in transportation levels may significantly impact EJ populations. In particular, an impact to bus transit, pedestrian facilities, or bicycle facilities could cause disproportionate impacts to low-income communities, as low-income residents more often use these modes of transportation. However, all transportation and traffic impacts, including impacts to alternative transportation, would be less than significant, and therefore would cause less than significant impacts to EJ populations. Likewise, transportation and traffic impacts would not be disproportionate.

Tribal Cultural Resources. *NO IMPACT*. The analysis did not identify any Native American environmental justice populations that either reside within six miles of the project or that rely on any subsistence resources that could be impacted by the proposed project.

Utilities and Service Systems. *LESS THAN SIGNIFICANT IMPACT*. A disproportionate utility or service system impact on an EJ population could occur if a project required substantial water resources or significantly impacted wastewater treatment facility and landfill capacity. As determined in the Utilities and Service Systems section, adequate water supply is available to serve the project. The project would, therefore, not result in a disproportionate impact to the local EJ population.

There is also significant remaining capacity at the local landfill and wastewater treatment facilities that would be utilized by the project. No changes or expansion to the landfill or wastewater treatment facility would be needed to accommodate this project. The project would also be required to comply with state and local regulations that apply to construction and operation waste. These regulations would require that wastes are managed to meet waste diversion goals and protect public health and safety. The project would therefore not have a disproportionate impact on the EJ population.

The project's Utilities and Service Systems impacts would be less than significant for all the area's population, including the EJ population.

Mandatory Findings of Significance. *LESS THAN SIGNIFICANT IMPACT*. The analysis determined that cumulative project impacts would be less than significant with mitigation. Cumulative impacts would be less than significant for both the general population and the EJ population.