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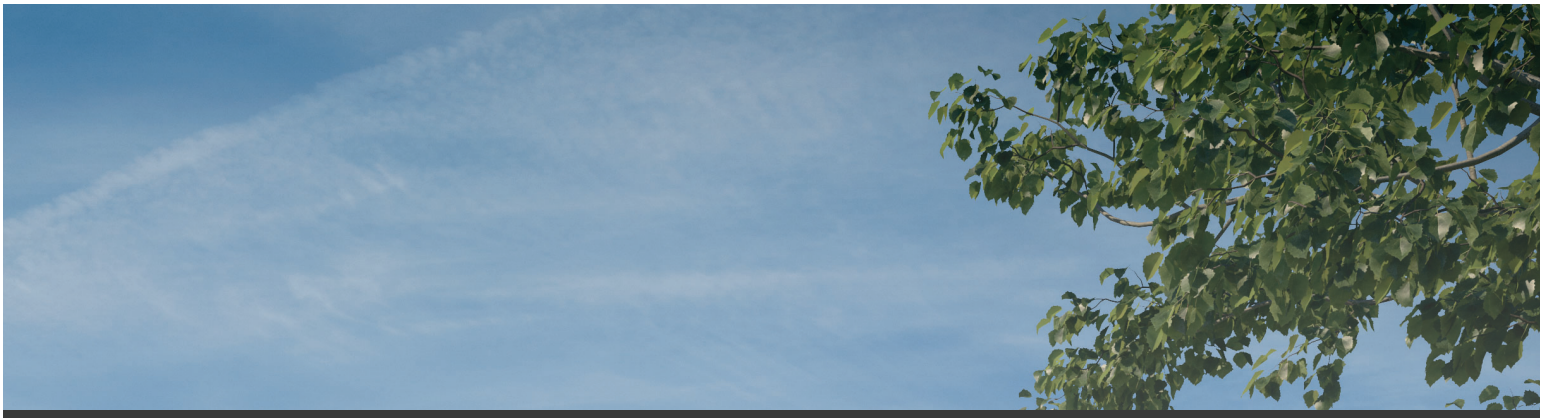

Small Power Plant Exemption Application

Great Oaks South Data Center

Submitted to the:
California Energy Commission

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March 2020

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SECTION 1.0 INTRODUCTION AND PURPOSE

SV1, LLC, a wholly owned subsidiary of Equinix, LLC (SV1) 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 99.0 MW[1] Great Oaks South Backup Generating Facility (GOSBGF). The GOSBGF will consist of a total of 36 diesel fired generators that will be used exclusively to provide backup generation to support the Great Oaks South Data Center (GOSDC), which will be constructed on vacant land southeast corner of Via Del Oro and San Ignacio Avenue in San Jose, California. Of 36 GOSBGF emergency generators to be installed, 30 generators will be primary, the remaining six generators will be redundant. The redundant generators are intended to only carry load when the primary generators fail. In addition, the GOSBGF will include three life safety emergency generators to support life safety system including fire suppression and other emergency operations. In total, 39 generators will be installed. Figure 1.1-1, Figure 1.1-2, and Figure 1.1-3 depict the location of the GOSDC and the GOSBGF.

Unlike the typical electrical generating facility reviewed by the Commission, the GOSBGF is designed to operate only when electricity from Pacific Gas & Electric Company (PG&E) is unavailable to the GOSDC. The GOSBGF is isolated from the electrical transmission grid and will only come online when it is identified that the electricity from PG&E has failed. GOSBGF will consist of three generation yards, each separately electrically interconnected to the three data center buildings that will only operate when the PG&E Electrical service to three data centers have failed. Section 2 of the SPPE Application provides a detailed description of the construction and proposed operation of the GOSBGF. To describe the context of the GOSBGF and its role in serving the GOSDC, Section 2 also includes a general description of the GOSDC including currently proposed minor modifications.

Section 3 of the SPPE Application provides CEQA project information.

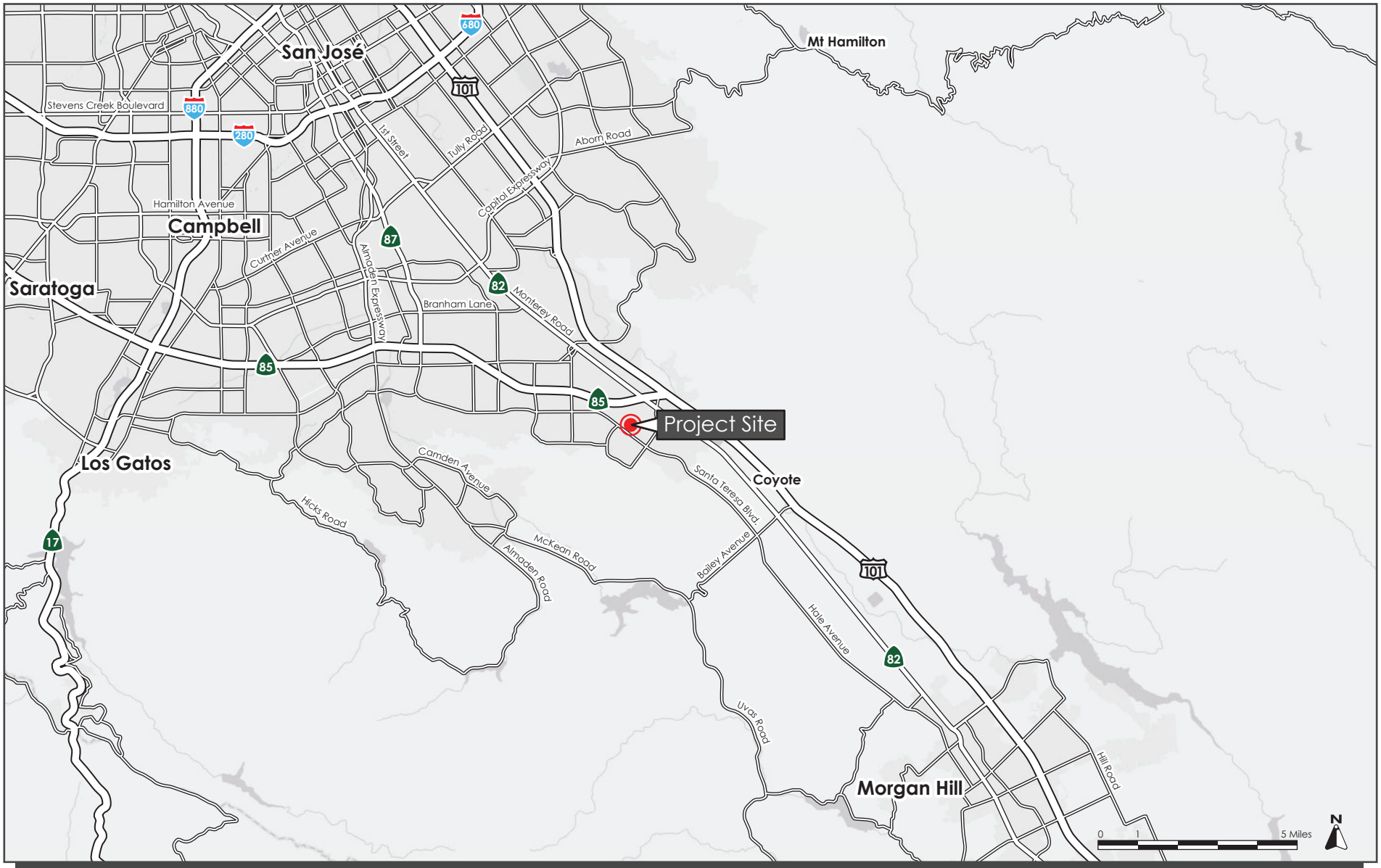
Section 4 of the SPPE Application includes environmental information and analyses in sufficient detail to allow the Commission to conduct an Initial Study consistent with Section 16063(d) of the California Environmental Quality Act (CEQA) Guidelines. Section 4 also contains an evaluation of the GOSBGF's potential effects on energy resources consistent with CEC Regulations.

Section 5 of the SPPE Application includes a discussion of Alternative backup generation configurations and technology considered by SV1 including an evaluation of the No Project Alternative.

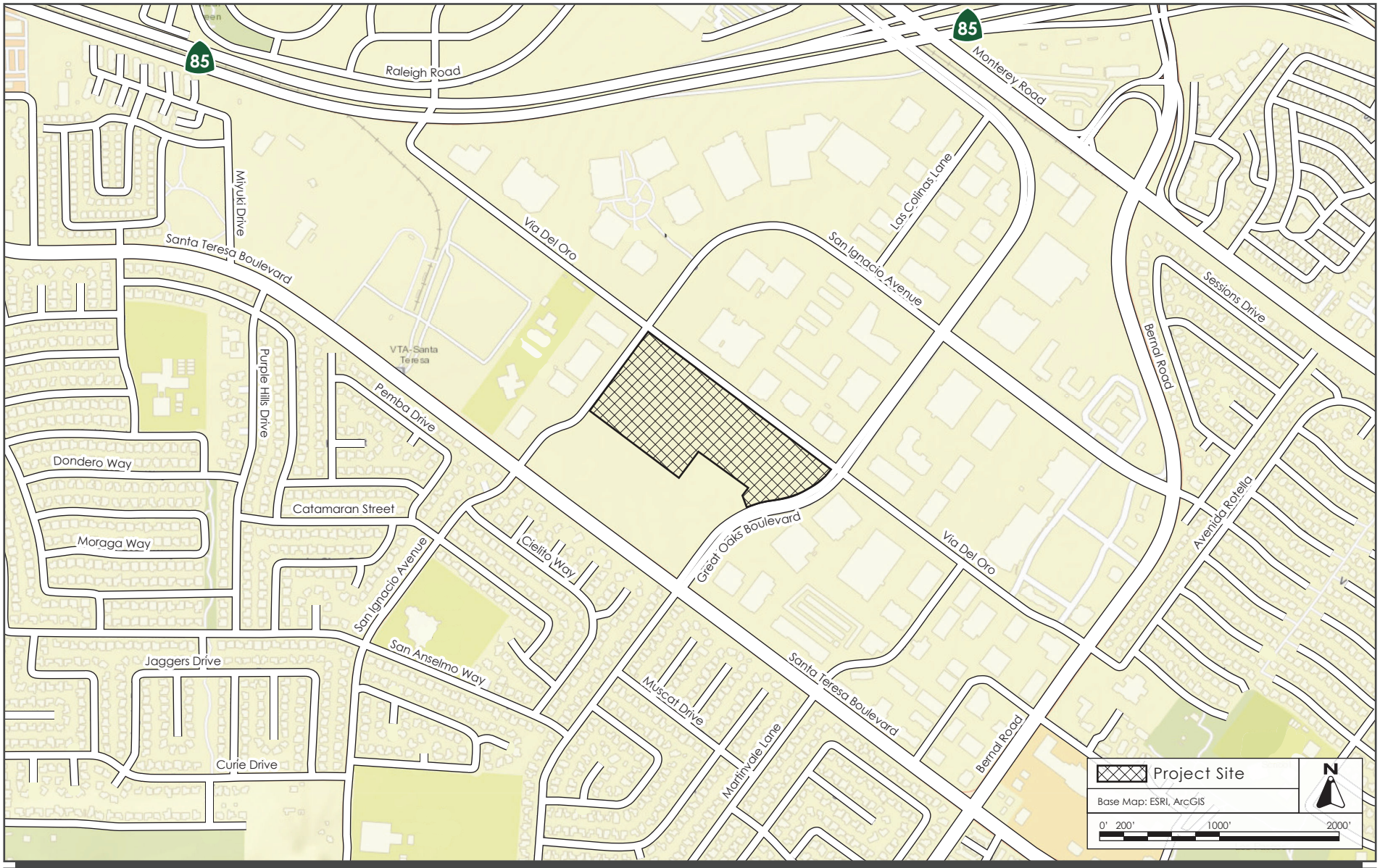
Section 6.0 of the SPPE Application includes a list of references.

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 GOSBGF, as required by Subsection (i) of Appendix F of the CEC SPPE Regulations.

[1] Maximum total demand of the Great Oaks South Data Center.



REGIONAL MAP | FIGURE 1.1-1



VICINITY MAP | FIGURE 1.1-2

AERIAL PHOTOGRAPH AND SURROUNDING LAND USES | FIGURE 1.1-3

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

1.1 NEED FOR BACKUP GENERATION

The GOSDC's purpose is to provide SV1 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 SV1's clients. The GOSDC will be supplied electricity by PG&E through a new substation.

To ensure a reliable supply of high-quality power, the GOSBGF was designed to provide backup electricity to the GOSDC to be used solely in the rare event that electricity cannot be supplied from PG&E and delivered to the GOSDC buildings. To ensure no interruption of electricity service to the servers housed in the GOSDC buildings, 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 power generation source to continue supplying steady power to the servers and other equipment. The GOSBGF provides that backup power generation source.

1.2 PRIOR ENVIRONMENTAL REVIEW

The City of San José approved a Special Use Permit (SUP) including an Initial Study (IS) and adopted a Mitigated Negative Declaration (MND) and a Mitigation Monitoring and Reporting Plan (MMRP) for the GOSDC on February 1st, 2017. The SUP, IS, MND and MMRP included backup generation facilities of 21 3-MW generators. A copy of the MND which includes the IS and MMRP and supporting technical studies is included in Appendix K.

The original configuration of the GOSDC consisted of three, two-story buildings each encompassing 191,000 gross square feet (gsf), for a total of approximately 573,000 gsf. The data center buildings were designated SV-12, SV-13 and SV-14. Each of the data center buildings was originally planned to be served by seven (six primary plus one redundant) backup diesel fired generators, each with peak capacity rating of 3 MW.

Since approval by the City, SV1 has reconfigured the GOSDC project, by optimizing the building layouts and now proposes that the GOSDC consist of three two-story buildings encompassing a total building square footage of roughly 547,050 gsf and total electrical load at full buildout not to exceed 99.0 MW. The reconfigured GOSDC will be constructed in three phases and the designations for Buildings SV-14 and SV-13 will now be SV-18 and SV-19, respectively. Backup generation has been increased from 21 to 36 3.25-MW and three 0.5-MW generators to serve the additional electrical load and will be served by the GOSBGF.

The City is allowing construction of the GOSDC to continue for SV-12 and is currently processing the modifications to allow full buildout of the reconfigured GOSDC as proposed by SV1. The City intends to rely on the environmental analysis of the GOSBGF completed by the Commission to supplement its environmental review of the modified GOSDC by way of an Addendum to the 2017 MND.

To enable the City to timely conduct its review of the modified GOSDC, SV1 requests the Commission complete its review of the GOSBGF by September 2020.

1.3 COMMISSION SPPE JURISDICTION

SV1 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.[2] 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[3]. The GOSBGF is not a typical power generating facility in that it consists of generators that can operate independently. In addition, the generators are arranged in generation yards to support individual buildings within the greater data center campus. None of the generators will be interconnected directly to the electrical transmission system and therefore no electricity can be delivered off site.[4] All generators are electrically isolated from the electrical transmission system.

1.3.1 Backup Electrical Generating Facility

It is SV1's understanding that although the CEC is the lead agency for making a determination of whether the GOSBGF is a thermal power plant that can qualify for a SPPE, that ultimate decision does not extend to the GOSDC facilities. Therefore, the Commission's lead agency status applies only to the GOSBGF facilities. As described in Section 1.3.2 below, SV1 acknowledges that the CEC should include the potential effects of the modifications to the GOSDC in its CEQA analysis, but the ultimate determination of whether the GOSDC should be approved, denied, or subject to mitigation measures is solely within the City's jurisdiction.

Additionally, the potential effects of the generating facilities were analyzed in the prior MND. SV1 has optimized the GOSDC which necessitates the following modifications to the generating facilities that were evaluated in the prior MND.

- Replacing the (21) 3 MW generators with (36) 3.25 MW generators.
- Adding (3) 0.50 MW emergency generators, 1 per building
- Relocating the generators and associated electric equipment, each serving its respective data center building.

As described in Section 2.3 of this application, the maximum generating capacity of the GOSBGF is limited by the maximum electricity demand of the GOSDC. Based on the methodology adopted by the Commission's Final Decision Granting a SPPE for the McLaren Backup Generating Facility, the maximum generating capacity of the GOSBGF is determined by the maximum capacity of the load being served.[5] That maximum electricity demand is 99.0 MW. Therefore, the maximum generating

[2] Public Resources Code (PRC) Section 25500.
[3] PRC Section 25541 and Title 20 California Code of Regulations (CCR) Section 1934.
[4] The Commission Staff has determined that notwithstanding these facts, the Commission has jurisdiction over the GOSBGF. SV1 LLC reserves all its rights regarding whether or not the Commission has jurisdiction over the GOSBGF and the filing of this SPPE Application is not an admission by SV1 LLC that the Commission has exclusive jurisdiction over the GOSBGF or the GOSDC.
[5]Final Decision Granting SPPE for the McLaren Backup Generating Facility, 17-SPPE-01, CEC-800-2018-003-CMF, page 8.

capacity of the GOSBGF is below the Commission's 100 MW SPPE threshold and meets the qualifications for the grant of a SPPE.

1.3.2 Treatment of Data Center Facilities Not Within Scope of SPPE

Since the GOSDC is not within the scope of the Commission's decision on whether or not to grant an SPPE, the potential effects of the GOSDC should be analyzed in a manner to allow the City to adopt the analysis for purposes of considering its permit decision. As discussed in Section 1.3, the GOSDC was approved by the City in 2017. SV1 is currently proposing modifications of the GOSDC that resulted from optimizing the site for its customer(s). These modifications do not extend outside the original site. The Commission should evaluate the potential effects of these proposed modifications by comparing them to the GOSDC as approved by the City. In other words, the Commission should be treating the proposed modifications to the GOSDC in the same manner as it were processing an Addendum to the previously approved and adopted MND. These proposed modifications include:

- Construction of three 182,350 square foot, two-story data center buildings instead of three 191,000 square foot, two-story data center buildings.
- Replacing the Indirect Evaporative Cooling system with Water-Cooled Chilled Water System with water-side economizer and Computer Room Air-Handling (CRAH) units for each building. The new mechanical system will consist of (33) total 1000-ton chillers, (11) per building. Each building's cooling system will operate in a 9+2 redundancy configuration.

To assist the Commission in providing an analysis that the City could adopt and rely upon as an Addendum, SV1 provides a description of the GOSDC highlighting the proposed modifications that will be considered by the City (see Section 2.3.1). In addition to the potential effects of the GOSBGF, the modifications to the GOSDC are considered in the environmental analyses of Section 4.

SECTION 2.0 PROJECT DESCRIPTION

2.1 OVERVIEW OF PROPOSED GENERATING FACILITIES

GOSBGF will be a backup generating facility with a generation capacity of up to 99.0 MW to support the need for the GOSDC to provide uninterruptible power supply for its tenant's servers. The GOSBGF will consist of thirty-six (36) diesel-fired back up generators, arranged in six generation yards, each designed to serve one of the three data center buildings that make up the GOSDC. Project elements will also include switchgear and distribution cabling to interconnect the six generation yards to their respective buildings. In addition, the GOSBGF will include three (3) life safety diesel fired generators, each capable of generating 0.50 MW.

2.2 GENERATING FACILITY DESCRIPTION, CONSTRUCTION, AND OPERATION

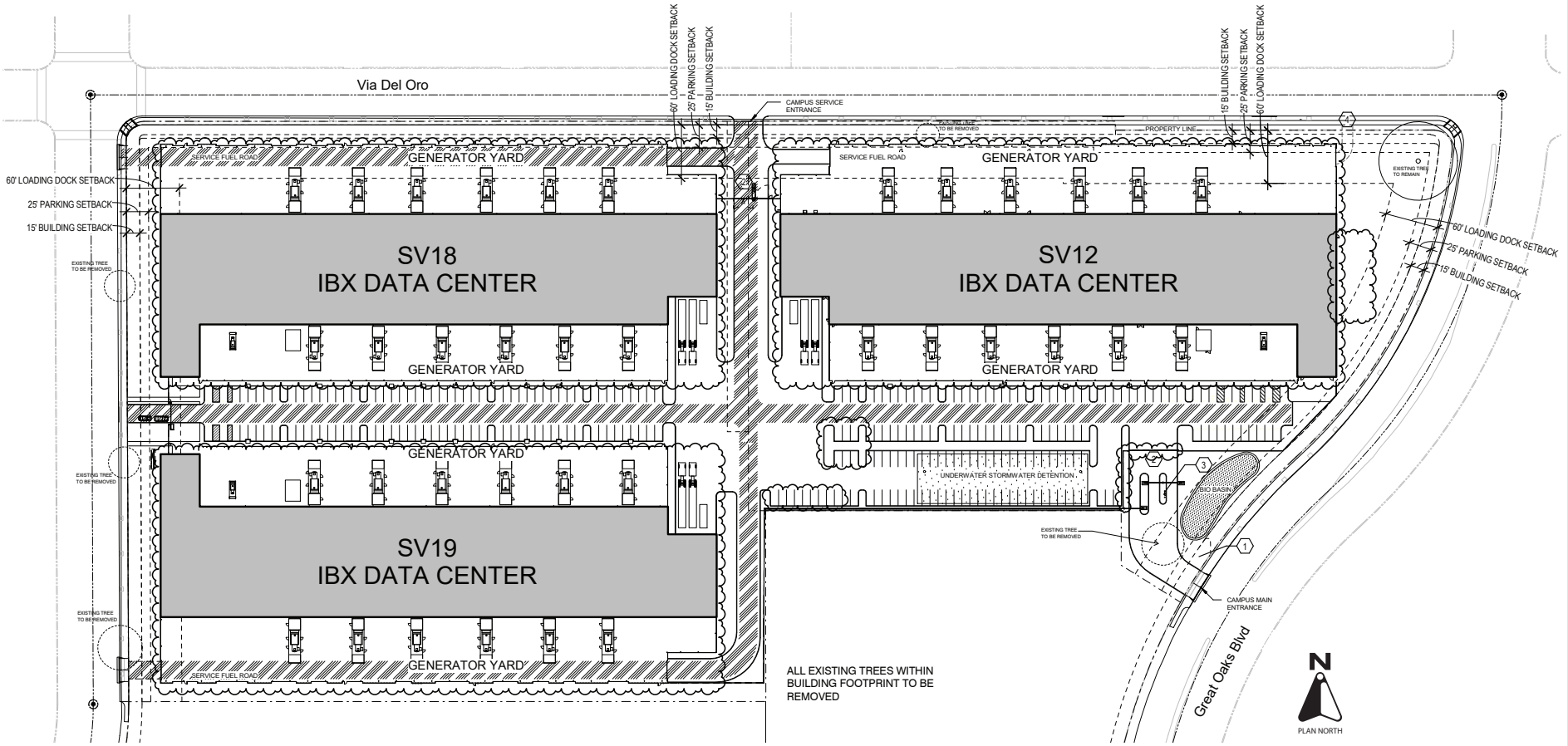
2.2.1 Site Description

The GOSDC site is located within the City of San Jose. The site is associated with three addresses, each address designated to one building assigned by the City of San José. The addresses are as follows: SV12 – 123 Great Oaks Blvd., San José, CA; SV18 – 127 Great Oaks Blvd, San José, CA; SV19 – 131 Great Oaks Blvd, San José, CA. The site consists of parcel numbers APN 706-02-057 and APN 706-02-060. The site is located in an office park area and is surrounded by one- to two-story commercial office buildings to the west, north, and east. There is no development south of the site.

The approximately 18-acre project site is flat, undeveloped, and consists of an open vacant lot with scattered trees, including a large valley oak, a City designated Heritage Tree, at the corner of Via Del Oro and Great Oaks Boulevard. The project site is located in an urban area and bound by Via Del Oro (a two-lane roadway with a center turn lane) to the north, Great Oaks Boulevard (a four-lane roadway with a center median) to the east, vacant land to the south, and San Ignacio Avenue (a two-lane roadway with a center turn lane) to the west. Surrounding development consists of one- to two-story modern office buildings, constructed with stucco, steel, and reflective glass windows. Street trees are planted on Via Del Oro, Great Oaks Boulevard, and San Ignacio Avenue on the opposite side of the street (not along the project frontage). See Figure 1.1-1, Figure 1.1-2, and Figure 1.1-3 for regional, vicinity, and aerial site location maps.

2.2.2 General Site Arrangement and Layout

The 99.0 MW backup generators will be located at the site in generation yards at six separate locations within the GOSDC. Each of the generation yards will be located adjacent to the building it serves. Figure 2.2-1 shows the general arrangement and site layout of the GOSBGF within the GOSDC site. Of the 99 MW generators, 32.5 MW of the backup generation will be dedicated to support its respective building. In addition, each of the 0.50 MW life safety generators will be located within the generation yard supporting each respective building. The total generation demand for each building will be 33.0 MW.



SITE PLAN | FIGURE 2.2-1

Each backup generator is a fully independent package system with dedicated fuel tanks located on a skid below the generator. Each generation yard will be electrically interconnected to the building it serves through above ground cabling to containerized electrical skids located outside of the building that house electrical distribution equipment.

2.2.3 Generating Capacity

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

1. The GOSBGF uses internal combustion engines and not turbines.
2. The GOSBGF internal combustion engines have a peak rating and a continuous rating.
3. The GOSBGF is controlled exclusively by the GOSDC through software technology and electronic devices.
4. The GOSBGF has been designed with three 10+2 configurations for feeding data center critical equipment:
    a. Each building will have total of 12 generators with each generator rated at 3.25 MW. Two of twelve generators are designated as redundant generators and will only support building load when two of the primary generators have failed.
5. The life safety generators are separate from the data center systems to serve for building safety services including Fire Alarm system, Fire Pumps, general lighting, administration office space, shipping receiving, and common building systems such as elevators. This building's generator is sized at 0.50 MW.
7. The GOSBGF will only be operated for maintenance, testing and during emergency utility power outages.
8. The GOSBGF will only operate at a load equal to the demand by the GOSDC during an emergency utility outage.
9. The GOSBGF is not interconnected to the transmission grid.

Based on the methodology adopted by the Commission's Final Decision Granting a SPPE for the McLaren Backup Generating Facility, the maximum generating capacity of the GOSBGF is determined by the maximum of capacity of the load being served. The maximum capacity of the load being served is the maximum demand of the GOSDC on its design day. In addition to using the maximum data center demand, SV1 offers the following methodologies that will be reasonable, not arbitrary and capricious, and will take into account the unique features of a backup generating facility such as the GOSBGF.

2.2.3.1 *Data Center Load Demand*

The generating capacity of the GOSBGF is calculating by recognizing that the load of the backup generators is completely dictated by the demand of the data center. Using this methodology reflects the most accurate way of describing the relationship between the GOSBGF and the GOSDC and describes the actual physical constraint to the generating capacity.

In other words, the GOSDC employs physical electronic devices and software technology (Automatic Throw-over main breakers, Building Load Management System) that limits the output of the GOSBGF.

The GOSDC will include engine control software and electronic equipment automatically that will adjust the output of the GOSBGF based only on the demand of the GOSDC. The demand of the data center is not some ethereal concept derived for purposes of determining generating capacity, but is instead a physical constraint that is not controlled by SV1, but rather controlled through software and electronic control devices that match the output of the GOSBGF during a power outage where PG&E cannot serve the GOSDC load. The fact that the GOSBGF is not electrically connected to anything other than the data center creates this unique factual circumstance.

This unique situation must be distinguished from the case of a conventional power facility that is interconnected to the transmission grid and responds to calls from the California Independent System Operator (CaISO). In the case of a conventional power facility, the CaISO, can call on any portion of the generator's capacity, including its maximum generating capacity, as the CaISO can direct the electricity to different parts of the system. For the GOSBGF there is only one place the electricity can go – the GOSDC. Therefore, the most accurate way of calculating generating capacity from a backup generating facility that solely supports a data center is to understand the potential load of the receiving data center.

It is also important to note that the design demand of the GOSDC, which the GOSBGF has been designed to reliably supply with redundant components during an emergency, is based on the maximum critical IT load occurring during the hottest ASHRAE design day temperature for this facility. Such conditions are possible but extremely unlikely to ever occur. The GOSDC load on that worst-case day is just under 99.0 MW below the SPPE threshold.

The generators are dedicated to serve the critical IT requirement of six large server rooms on two floors in each building as well as the mechanical equipment supporting these server rooms In addition, the smaller 0.50 MW generator will serve common spaces of the building (lobby, conference area, hallways, etc.). The GOSDC will serve three buildings designed to provide 25.0 MW of critical IT load per building. The mechanical systems will impose a load of 7.5 MW per building on the GOSDC for the hottest design day. Therefore, the maximum GOSDC load is 75.0 MW critical IT + 22.5 MW of Total Mechanical Building Load for a total load of 97.5 MW excluding the 1.5 MW for building general safety purposes.

It is important to note that while the GOSDC has been designed to accommodate full critical IT load, it is SV1's experience that clients rarely utilize the entire critical IT load available inside a server room(s) that it rents. Also, the average ambient temperature conditions for a data center in the San Jose area are much lower than the hottest design day. The average critical IT load is expected to be more on the order of 56.0 MW and the average total mechanical building load is expected to be approximately 17.0 MW.

The data center industry utilizes a factor called as 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. For the worst-case day, the peak PUE for the GOSDC would be 1.30 (Total 97.5 MW demand of Building on Worst Case Day divided by 75.0 MW total critical IT

load). The average annual PUE for the GOSDC will be 1.23 (total 92.25 MW demand of building average conditions divided by 75.0 MW expected critical IT load). These PUE estimates are based on design assumptions and represent worst case. SV1's experience with operation of other data centers is that the actual PUE will be closer to 1.2.

2.2.3.2 *Capacity Less Redundant Generation*

The GOSBGF has been designed with a 36-to make-30 design basis. That is, there are 30 primary generators with six redundant generators. Therefore, if a primary generator failed, the load that generator could be served by one of the six redundant generators. The six redundant generators are designed to only carry load when one or up to six primary generators fail. At all time, there will only be maximum 30 generators loaded when all three buildings have been fully constructed.

Redundant generation should not be counted as part of a facility's generating capacity because by definition it will only replace the primary generation. Therefore, the Commission could calculate the generating capacity of the GOSBGF by looking at the nameplate rating of each generator and discount the generating capacity of all of redundant generators to arrive at the generating capacity of the GOSBGF. This calculation is as follows:

36 Generators – (30+6), Primary Generators = 30 Generators

30 Generators x 3.25 MW (Nameplate Rating) = 97.5 MW

3 Life Safety Generator x 0.5 MW (Nameplate Rating) = 1.5 MW

97.5 MW + 1.5 MW = 99 MW Facility Generating Capacity

2.2.3.3 *Continuous Rating*

A third method that the Commission could use to calculate generating capacity would be to recognize that unlike a turbine nameplate rating, a backup internal combustion engine has two ratings; a peak rating and a continuous rating. Use of the continuous rating will be more accurate since the design, including redundant generators, is based entirely on the continuous rating as described in Appendix AQ-2 located within the Air Quality Report in Appendix A. Ignoring redundancy and using the continuous rating of the 36 generators and the three life-safety generator the calculations will be:

36 Generators x 2.5 MW = 90.0 MW
3 Life Safety Generator x 0.5 MW = 1.5 MW
90.0 MW + 1.5 MW = 91.5 MW Facility Generating Capacity

Although this method reflects the design basis of the GOSBGF, it does not reflect the actual constraint of the data center demand and its software and electronic equipment that dictate how the GOSBGF will operate. It does; however, recognize and incorporate the concepts outlined in Section 2003 of the Commission Regulations that look at average continuous operations and not peak operations.

2.2.4 Backup Electrical System Design

2.2.4.1 *Overview*

To place the role of the GOSBGF into context, the following information about the overall GOSDC design is provided. The design objective of the backup electrical system is to provide sufficient equipment and redundancy to ensure that the servers housed in the GOSDC buildings will never be without electricity to support critical loads. The critical loads include the load to support the building operation in addition to the electricity consumed by the servers themselves. The largest of these building loads is to provide cooling for the server rooms.

For backup supply for a data center, it is commonplace to build levels of systems and equipment redundancy and concurrent maintainability into the overall electrical and mechanical infrastructure. The base quantity of systems that are required to serve the design load of the facility is referred to as "N". When reliability requirements dictate that redundant systems are added to the base quantity of systems, it is commonplace in the industry to refer to the number of redundant systems as "X" in the representation "N+X".

Each redundant electrical system will consist of an Uninterruptible Power Supply (UPS) system that will be supported by batteries, electrical switchgear, an electrical inverter and portions of the GOSBGF backup generation. The UPS systems that will be deployed at the GOSDC will be consist of two (2) 1,250 KW UPS units will be paralleled together to provide "N Unit" of redundant Critical Capacity of 2.5 MW. The two UPS units will share a potential 2.5 MW of critical load by employing load sharing capabilities inherent to the UPS design. The power inputs of the two UPS units will be electrically connected to a single main switch board. This main switchboard will be connected to a dedicated 3,000 KVA Utility Transformer as well as dedicated to one of the GOSBGF proposed backup generators.

The original design selected a 3.25 MW peak rated generator. SV1 completed an analysis of the individual generator system loads as designed in the 36 to make 30 load sharing distribution. In this analysis, it was discovered that at design day conditions an individual generator would only be tasked to a maximum load just under 3.25 MW. This peak loading will only be realized during a normal utility power loss and if a single generator in a group of 12 were to fail while the 12 to make 10 electrical system was providing power to a maximum 24 MW of critical load, which is 100 percent of the IT loading demand, all during design day temperatures. The design day temperature is the hottest day of the year for the San Jose region. As the analysis further detailed, the design day conditions are dynamic based on the outside temperature, and thus over the period of 24 hours, the load analysis showed the average loading of the generator met the manufactures ratings for continuous loading. Therefore, SV1 was able to modify the generator size from a 3.5 MW peak capacity to a 3.25 MW peak capacity.

2.2.5 UPS System and Batteries

2.2.5.1 *UPS System*

The UPS System and Batteries are part of the GOSDC and are not part of the GOSBGF. However, the following description is provided to describe how the UPS will dispatch the individual generators of the GOSBGF. 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 liquid crystal display (LCD) graphic display screen on the front of the UPS. The UPS will operate in the following modes:

- **Normal** – Insulated Gate Bipolar Transistor (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 will 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 will 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 will recover to the Normal Operating Mode and will 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 will 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.

2.2.5.2 *Batteries*

The battery system will consist of lithium-ion batteries, circuit breaker for isolating the battery rack from the UPS and control interface to the UPS module. The circuit breaker will be sized to allow discharge at the maximum published rating of the battery. A single interface between the lithium-ion battery racks and the UPS module will provide status and control of the battery cabinet's internal breaker.

The battery rack will be rated NEMA 1 with front door, side covers and rear cover, will be suitable for installation in a limited-access area, and UL 9540A Listed Overhead-installed cabling will be accommodated. The battery rack will be provided with an optional conduit box and will provide terminals suitable for two-hole, long-barrel compression lugs. Cable installation will not require removal of batteries or any other battery rack assemblies.

The installer will provide all cabling necessary to interconnect the UPS and the battery cabinets. The battery system will be sized to support a 1250 kW load for 6.5 minutes. The battery system will provide 100 percent initial capacity upon delivery.

The battery will be Samsung 67Ah 8S1P (lithium magnesium oxide/lithium nickel manganese cobalt oxide) with a ten (10) -year full warranty under full float operation.

The battery system will be provided with an integrated battery monitoring system. The system will provide battery safety and on-line remote monitoring.

The system will include system, rack and battery module monitoring of these battery parameters:

- Individual cell voltage
- Individual cell temperature
- Cell balance per battery module
- Rack voltage
- Rack average cell voltage
- Rack current
- Rack average cell temperature
- Rack state of health
- Rack state of charge
- Rack major and minor alarms
- Rack disconnect position
- System average state of charge
- System major and minor alarms (also reported to the UPS)

2.2.6 Electrical Generation Equipment

Each of the 36 generators will be a Tier-2 emergency diesel fired generator. The generators will be Cummins model C3250D6e. The maximum peak generating capacity of each model is 3.25 MW with a steady state continuous generating capacity of 2.5 MW. Specification sheets for each manufacturer and evidence of the steady state continuous ratings are provided in Appendix J.

Each individual generator will be provided with its own package system. Within that package, the prime mover and alternator will be made ready for the immediate call for the request for power controlled by the UPS. Each generator package will integrate a dedicated fuel tank with a capacity of 9,200 gallons. There will be total of six generators yards for the three buildings, two generators yards per each building. The 10+2 generators per each building will be configured and installed on concrete slab. Half of the generators in each building will be installed in the first equipment yard and the other half will be located in the second equipment yard next to the building. The generators are approximately 10 feet wide, 50 feet long and 24 feet high. Each generator will have a stack height of approximately 19 feet 3 inches. When placed on slab, they will be spaced approximately 56 feet apart horizontally. Each generator yard will be located adjacent to the GOSDC building it serves. The generator yards will be housed in pre-manufactured and UL Listed metal enclosures.

2.2.7 Major Electrical Equipment and Systems

At 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, 600V rated power cables in

conduit, rated for the full ampacity output rating of the generator will traverse from the generator into the data center facility terminating on a dedicated main generator input breaker. 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, such that the generator main breaker can never close unless the utility transformer main breaker is in the open state. The generator main breaker will only close based upon a gen start request from a Programmable Logic Controller (PLC) control logic that indicates that the utility transformer main breaker's source power is unavailable, the generator has started and is producing 480VAC power, and the utility transformer main breaker is in the open state. Once the generator main breaker is closed, the power created from the individual generator is then transmitted to the dedicated load of the N Unit two MW critical load system and connected mechanical. This load is the exact 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, an adjacent N Unit System or mechanical load, or anywhere outside the GOSDC.

2.2.8 Fuel System

The backup generators will use ultra-low sulfur diesel as fuel (< 15 parts per million sulfur by weight). Each generator package will include an integrated fuel tank with a capacity of 9,200 gallons, which is sufficient for operating at steady state continuous load for at least 30 hours.

2.2.9 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 GOSBGF.

2.2.10 Water Supply and Use

The GOSBGF will not require any consumption of water.

2.2.11 Waste Management

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

2.2.12 Hazardous Materials Management

The GOSBGF 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 security 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 at the gated entrances to the generator yard for re-fueling.

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, drains will be 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.

Spill containment kits will always be kept onsite to address any unlikely spill events.

To guard against degradation, fuel will be polished a minimum of every 12 months. Fuel polishing is a process that removes contamination from fuels in storage. Sources of contamination include water, microbial growth, and solid particles such as dirt.

2.2.13 Project Construction

Construction of the GOSBGF will take place in three phases. Each phase represents a generation yard which will be constructed to serve each of the three GOSDC buildings. Therefore, Phase I will include 12 generators and one life safety emergency generator for Building SV-12. Phase II will include 12 generators and the life safety emergency generator for Building SV-18, and Phase III will include 12 generators and the life safety emergency generator for Building SV-19.

Since the site preparation activities for the GOSDC will include the ground preparation and grading of the entire GOSDC site, the only construction activities associated with the GOSBGF will involve construction within each generation yard. This will include construction of concrete slabs, fencing, above ground conduit to install the electrical cabling to interconnect to the GOSDC Building switchgear, and placement and securing the generators. Drilled piles would be used for the construction of foundations.

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

Construction of the generation yard to support the first GOSDC building is anticipated to begin in the fourth quarter of 2020. Construction of each generation yard and placement of the generators is expected to take nine months. Construction personnel are estimated to range from 15 to 20 workers per generation yard including one crane operator.

Project construction includes three separate phases for each of the three buildings. Construction of the first GOSDC building, SV12, would begin in the fourth quarter of 2020 and is anticipated to finish in the first quarter of 2022, for a total of up to 15 months. Construction of the second GOSDC building, SV18, would begin in the second quarter of 2023 and is anticipated to finish in the fourth quarter of 2024, for a total of up to 18 months. Construction of the third GOSDC building, SV19, would begin in the second quarter of 2026 and is anticipated to finish in the fourth quarter of 2027, for a total of up to 18 months.

2.2.14 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. Bay Area Air Quality Management District's (BAAQMD) 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). However, it is SV1's experience that maintenance and testing of each engine rarely exceeds 12 hours annually and has agreed to limit hours for routine testing and maintenance to 20 hours per engine. In addition, SV1 proposes to limit operation to one engine at a time for maintenance and testing activities. Please see Section 4.5 for a complete description of the testing and maintenance frequencies and loading proposed for the GOSBGF.

2.3 GREAT OAKS SOUTH DATA CENTER FACILITIES DESCRIPTION

2.3.1 Overview

As described in Section 1.2 and 1.3 of this application, the GOSDC is not part of this SPPE. However, as discussed with Commission Staff in the pre-filing meeting SV1 are providing the following complete description of the GOSDC, beginning with the modifications to the previously approved configuration. This will allow the Commission to focus on evaluation of the potential effects of the modifications to support the City's final authorization. The GOSDC modifications include:

- Construction of three 182,350 square foot, two-story data center buildings instead of three 191,000 square foot, two-story data center buildings.
- Water-cooled chilled water system with water-side economizer and Computer Room Air-Handling (CRAH) units for each building. The new mechanical system will consist of 33 total 1000-ton chillers, 11 per building. Each buildings cooling system will operate in a 9+2 redundancy configuration.

2.3.2 Complete Description of the GOSDC

The new data center buildings will house computer servers and supporting equipment for private clients in environmentally controlled structures. A conceptual site plan is provided on Figure 2.2-1. The proposed data center buildings will each include twelve generators (ten primary and two redundant) located adjacent to the buildings. Each generator will have an electric capacity of 3.25

megawatts (MW) and provide standby backup electricity for the new buildings. Diesel fuel for the generators will be stored in 9,200 gallon above ground tanks under each generator.

The project will be supported from a new PG&E substation (Santa Teresa Substation), a 115 kV transmission line extension to the substation from the existing Metcalf-Edenvale 115 kV transmission line, and five new 21 kilovolt (kV) distribution feeders that will extend along Via Del Oro to the data center site. Our understanding is that PG&E is currently constructing the substation. The primary components of the project are described below.

2.3.2.1 *Data Center Buildings*

The project proposes to construct three, two-story data center buildings that will each be approximately 182,350 square feet in size with a building footprint of approximately 92,000 square feet. Each building will contain server cabinets on each floor and three loading docks for shipping and receiving uses.

A two-story office component, approximately 49 feet in height (53 feet to top of parapet) and 15,000 square feet in size, will also be part of each building. The office space will provide customer care, security, building operations, and flex office functions. See Figure 2.3-1.

2.3.2.2 *Site Access, Circulation, and Parking*

The site will be accessed by three entry points: two for passenger vehicles and one for delivery trucks. The main passenger vehicle driveway will be located on Great Oaks Boulevard near an existing curb cut in the boulevard median. The secondary passenger vehicle access point will be located on San Ignacio Avenue. Delivery trucks will be able to access the main loading dock areas via a truck driveway located on Via Del Oro. Each access point will be gated and electronically secured.

The project proposes to construct 266 surface parking spaces to be located throughout the approximately 18-acre site (refer to Figure 2.2-1). In addition, 21 bicycle parking spaces will be provided and there will be nine loading dock spaces for delivery trucks.

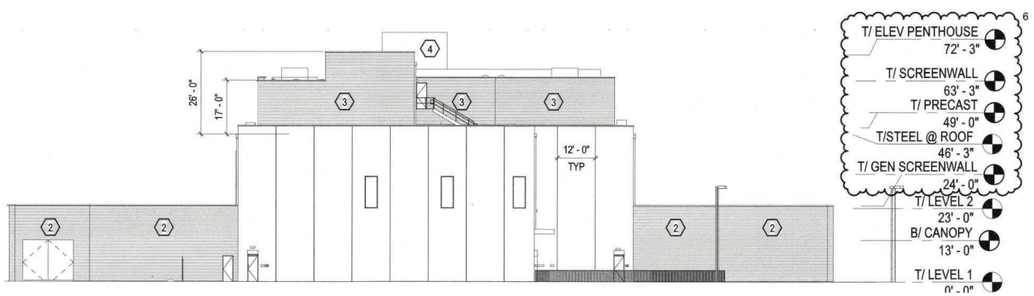
2.3.2.3 *Site Design: Energy Demand and Efficiency Measures*

Maximum Load Demand

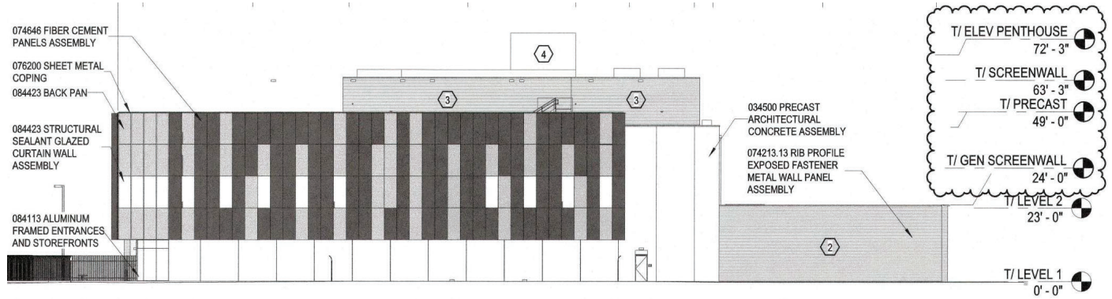
The projected maximum load demand for each of the proposed data center buildings is approximately 33.0 megawatts (MW). This load includes the power required to operate tenant information technology (IT) equipment as well as mechanical cooling systems, uninterruptible power systems (UPS) and general building lighting and power loads. The project applicant estimates the demand for maximum load anticipated with the proposed site improvements based on the occupancy of the data center buildings with data center uses supported by the proposed mechanical and electrical infrastructure.

Energy and Water Efficiency Measures

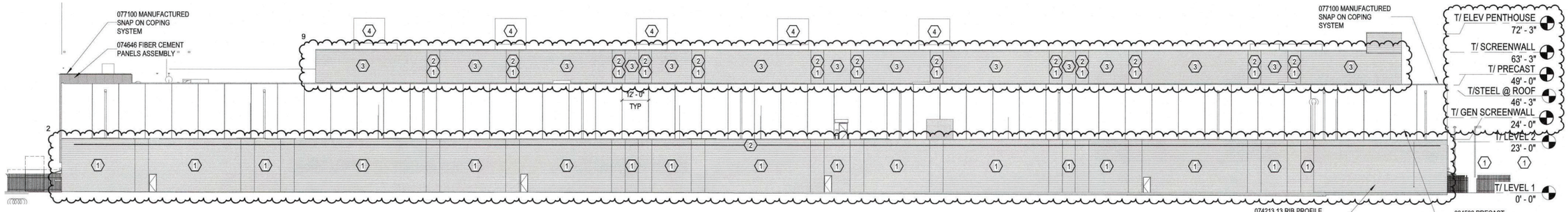
Due to heat generated by the data center IT equipment, cooling systems are one of the primary uses of energy in the buildings. In order to reduce greenhouse gas emissions and reduce the use of energy related to building operations, the project proposes to implement a number of efficiency measures related to selection and operation of electrical and mechanical equipment for building cooling (Appendix A). Table 2.3-1 lists the proposed efficiency measures related to mechanical and electrical systems in the buildings. Additional energy efficiency measures associated with tenant improvements and water use reduction are listed in Table 2.3-2.



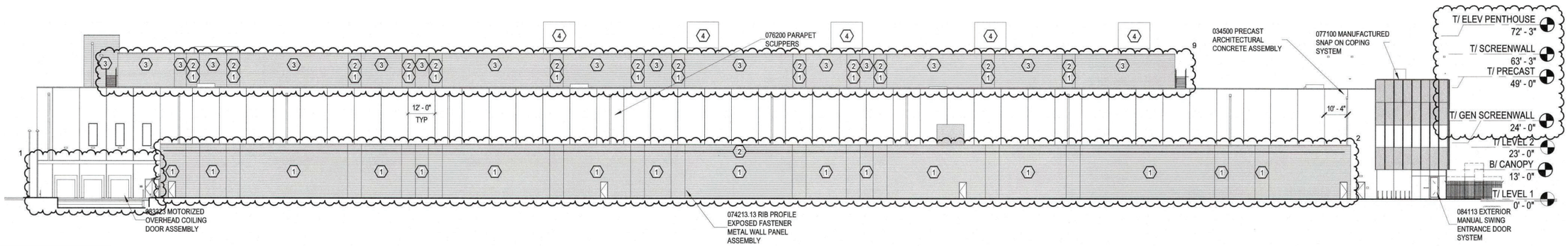
West Elevation



East Elevation



North Elevation



South Elevation

BUILDING ELEVATIONS | FIGURE 2.3-1

Table 2.3-1: Efficiency Features – Project Mechanical and Electrical Systems	
Optimize Energy Performance	• **Standards** CA Title 24 energy requirements will be exceeded. ASHRAE TC9-9 extended thermal envelope values will be utilized to allow economizer operation during greater periods of the year with A/C compressors operating only during peak load periods. • **Measurement & Verification** Metering will be provided to validate conservation measures. • **Efficient Equipment** High efficiency (96%+) UPS, High Efficiency Water-Cooled Chilled Water system with water-side economizer for the data halls & Variable Refrigerant Flow (VRF) cooling systems. • **Enhanced Commissioning** Independent commissioning agent reviews system design and verifies the performance of the installed systems (CAPCOA Best Management Practice; Measure BE-3). • **Cool Roof**: • Reduce Heat Island effect, the roofing materials meet Solar Reflectance Index value (SRI) of at least 82 for low sloped roofs, as well as meeting the following regulations: • EnergyStar/Title 24 Requirements for Cool Roofing • LEEDv4/Green Globe Requirements for Cool Roofing
Heating, Ventilation & Air Conditioning (HVAC)	• **High-Efficiency Systems** High Efficiency Water-Cooled Chilled Water systems with water-side economizer for data halls and Variable Refrigerant Flow (VRF) systems for office/support areas. Systems designed using ASHRAE TC9-9 extended thermal envelope values (max. 26.5 deg. C/79 deg. F) to allow economizer operation during greater periods of the year with A/C compressors operating only during peak load periods. Scalable cooling systems with only those units required to serve the actual load in operation to improve efficiency. Highly efficient Variable Refrigerant Flow (VRF) cooling systems for office/support areas to reduce fan energy. • **Airflow Management** Hot aisle containment, separated ceiling plenum to provide physical separation of hot and cool air in data halls. Use of blanking panels and other measures to avoid bypass of cold air into hot aisles.
Lighting	• **LED Lighting** High-efficiency, low mercury content LED lamping used throughout • **Lighting Controls** Automatic-off and occupancy-based lighting control. Dimming control for all spaces with lighting loads >0.5 watts/sf. Automatic demand-limiting control of lighting per Title 24 requirements.
Electrical	• High-efficiency (96%+) UPS systems. • Separate metering of building mechanical and lighting loads to validate compliance and conservation measures.

Table 2.3-2: Efficiency Measures for Tenants and Water Use Reduction	
Recycling Program	• During Operation: Implementation of LEED guidelines for the storage and collection of recyclables (LEEDv4 Core and Shell (CS)) Materials and Resources/ Prerequisite 1), intended to facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills. • During Construction: The Owner has implemented a Construction Waste Management Plan in line with LEEDv4-CS MRp2 – Construction Waste Management Plan and MRc5 Construction and Demolition Waste Management. A 75% construction waste diversion rate has been pursued, with an attempt at meeting the 95% diversion threshold for Exemplary Performance.
Operation Practices	• The building Owner has implemented the LEED policy for Green cleaning (LEEDv4 CS - Innovation in Design – EBOM Starter Kid), intended to reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particulate contaminants, which adversely affect air quality, human health, building finishes, building systems and the environment.
IT Equipment	• Energy Star equipment will be installed where applicable.
Materials	The building Owner has implemented the following LEED policies regarding Materials and Resources: • At least 10 products have been installed with Environmental Product Declarations (EPDs), reports disclosing the environmental impacts of the manufacturing processes. • At least 10 products have been installed with Material Ingredient Disclosures, reporting on the ingredients in the building materials and the related health impacts. • At least 20%, by cost, of the total materials cost for the project are comprised of materials with recycled content or FSC-certified wood products. FSC-certified wood products meet the Forest Stewardship Council (FSC)'s principles and criteria for sustainably managed forests.
Indoor Environmental Quality	The building Owner has implemented the following LEED policies regarding Indoor Environmental Quality: • LEEDv4 CS – IEQc1 Enhanced Indoor Air Quality Strategies ensuring that CO2 concentrations are monitored within all densely occupied spaces, and an alarm is triggered if the CO2 levels differ by more than 10% from the setpoint. In addition, MERV13 filters are used on all outdoor air intakes and ventilation rates to all occupied spaces are increased by 30% above the ASHRAE Standard 62.1-2010. • LEEDv4 CS – IEQc3 Construction IAQ Management Plan (LEED CS 2009 - Indoor Environmental Quality/Credit 3), implementing the following strategies: o During construction, meet or exceed the recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines For Occupied Buildings Under Construction, 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3).

	○ Protect stored on-site and installed absorptive materials from moisture damage. ○ Providing filtration media at the return air grille of air handlers utilizing filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 as determined by ASHRAE Standard 52.2-1999. • LEEDv4 CS – IEQc2 Low Emitting Materials: ○ Adhesives, Sealants, Paints, and Coatings used within the building's weatherproofing system meet the minimum VOC content as prescribed by LEED. ○ Paints, Coatings, Insulation, and Ceiling finishes meet the Greenguard Gold standard for emissions testing. ○ Flooring Systems, meet the following criteria: ▪ Carpet: Must meet the testing and product requirements of the CRI Green Label Plus program. ▪ Cushion: Must meet the testing and product requirements of the CRI Green Label program. ▪ Hard surface flooring must be certified as compliant with the FloorScore standard. ▪ Concrete, wood, bamboo and cork floor finishes such as sealer, stain and finish must meet the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004. ▪ Tile setting adhesives and grout must meet South Coast Air Quality Management District (SCAQMD) Rule 1168. VOC limits correspond to an effective date of July 1, 2005 and rule amendment date of January 7, 2005. ○ Composite Wood & Agrifiber Products meet the California Air and Resources Board (CARB) requirements for No Added Formaldehyde or Ultra Low Emitting Formaldehyde.
Water Use Reduction	• Ultra-low flow toilets and faucets will be used throughout.

2.3.2.4 *Cooling Systems*

Each building will be cooled by a water-cooled chilled water system consisting of (11) high-efficiency water-cooled chilled water modules mounted on the roof. Each module will include a water-cooled chiller, cooling tower and chilled water and condenser water pump and have a nominal capacity of 1,000 Tons. The chilled water distribution loops will be installed on the roof and second floor with branches routing to the first floor. The air-system will consist of up to (48) high-efficiency chilled water Computer Room Air-Handling (CRAH) units with a cooling capacity of 465 kW each. The administrative and service areas of the building will be cooled with high-efficiency split system variable refrigerant flow (VRF) cooling systems with simultaneous heating, cooling and heat recovery capabilities for optimum efficiency operation.

2.3.2.5 *Landscaping*

Landscaping will be planted throughout the main project site in accordance with General Plan policies. Approximately 133,500 square feet of landscaping is proposed around the data center buildings. In addition, street trees will be planted along the project frontages to help soften views of the project site from the surrounding area.

Prior to the approval of the original SUP on January 23, 2017, there were 15 on-site trees (including the one heritage tree) and five off-site trees within the right of way of the street fronting the property. After approval of the original SUP, 13 of the on-site trees were removed. For this Amendment to the SUP, it is anticipated that six additional trees will be removed (one on-site and five off-site), four of which are ordinance size trees. The landscape plan for this SUP Amendment proposes to plant 51 new street trees and 177 on-site trees. See Figure 2.3-2 for a landscape plan, and Figure 2.3-3 for a tree removal plan.

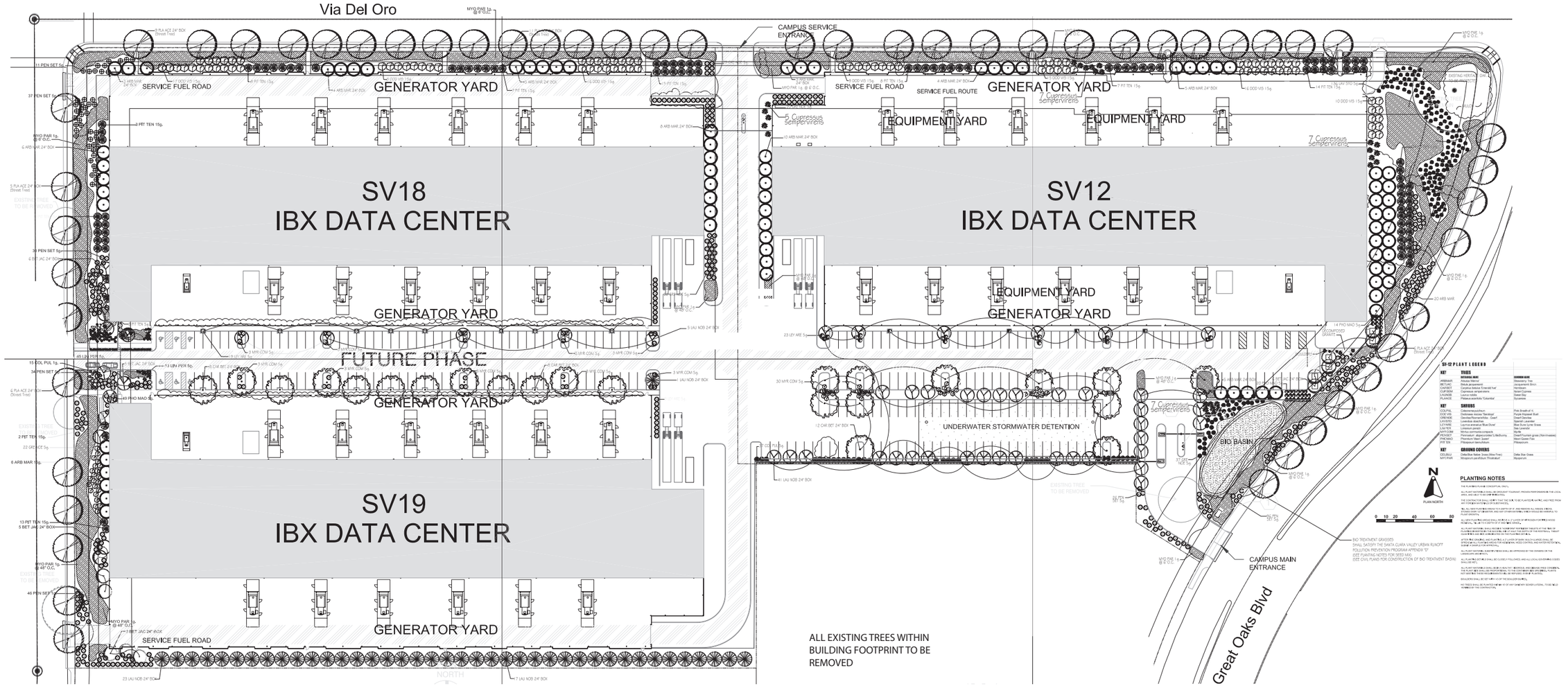
2.3.2.6 *Stormwater Management*

According to the Hydromodification Management Applicability Map for the City of San José, published by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), the property is located in a catchment or sub-watershed that is less than 65 percent impervious. Development of any property located in such a catchment area that results in more than one acre of impervious surfaces will require the incorporation of hydromodification management controls in accordance with Provision C.3.g of the Regional Water Quality Control Board's "Municipal Stormwater NPDES Permit" and City of San José Policy 8-14: Post-Construction Hydromodification Management. The project proposes to implement an underground detention basin with a storage volume of about 100,000 cubic feet. See Figure 2.3-4.

Since development of the property will result in the construction of new impervious surfaces totaling more than 10,000 square feet, the project will be required to incorporate post-construction stormwater treatment control measures adhering to the current requirements of Provision C.3 of the Regional Water Quality Control Board's "Municipal Stormwater NPDES Permit" and City of San José Policy 6-29: Post-Construction Urban Runoff Management.

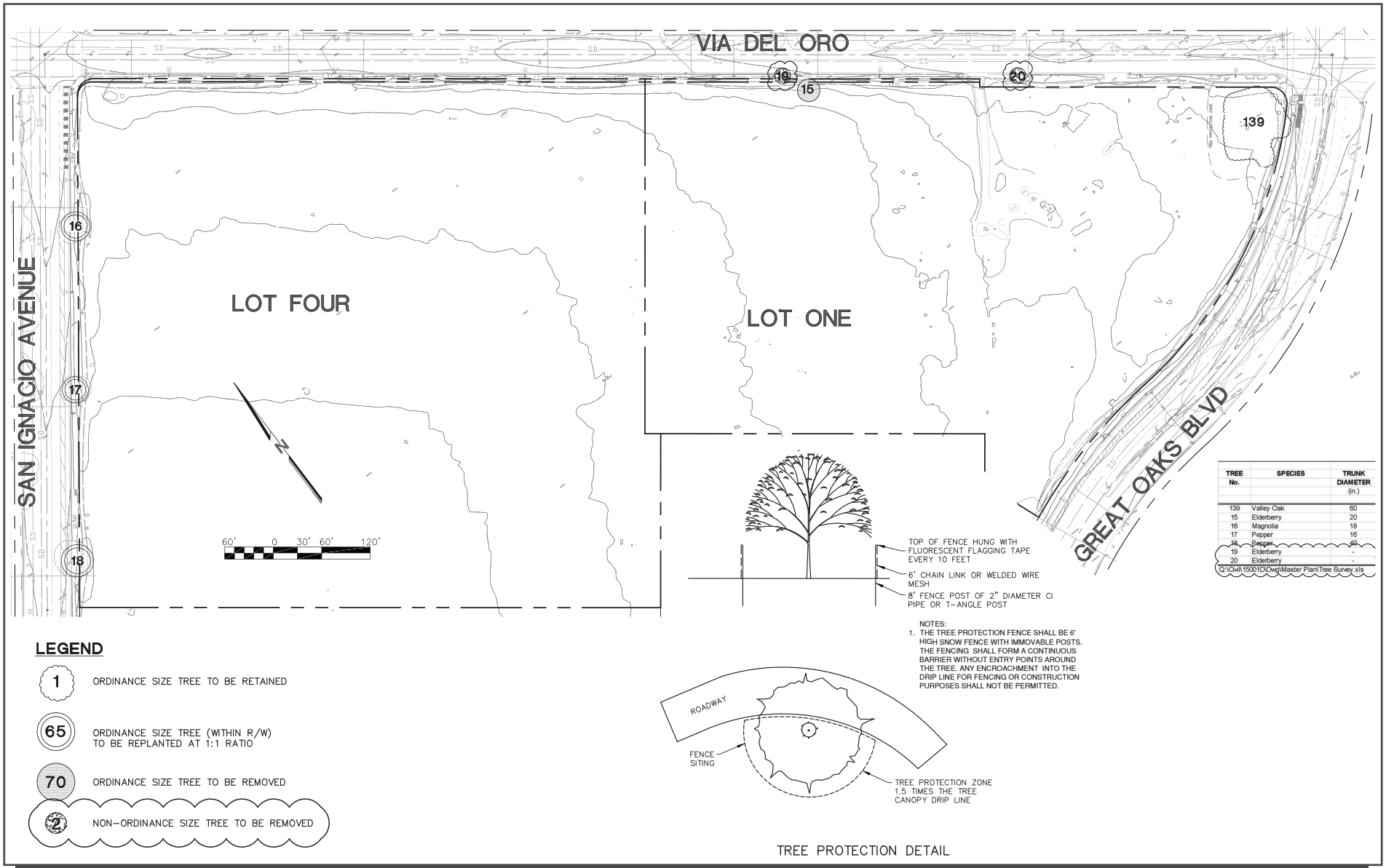
The measures to be implemented will include but are not limited to:

- Site Design Measures:
    - Protect existing trees, vegetation, and soil
    - Plant trees adjacent to and in parking areas and adjacent to other impervious areas
    - Cluster structures/pavement
    - Parking will not be provided in excess of Code

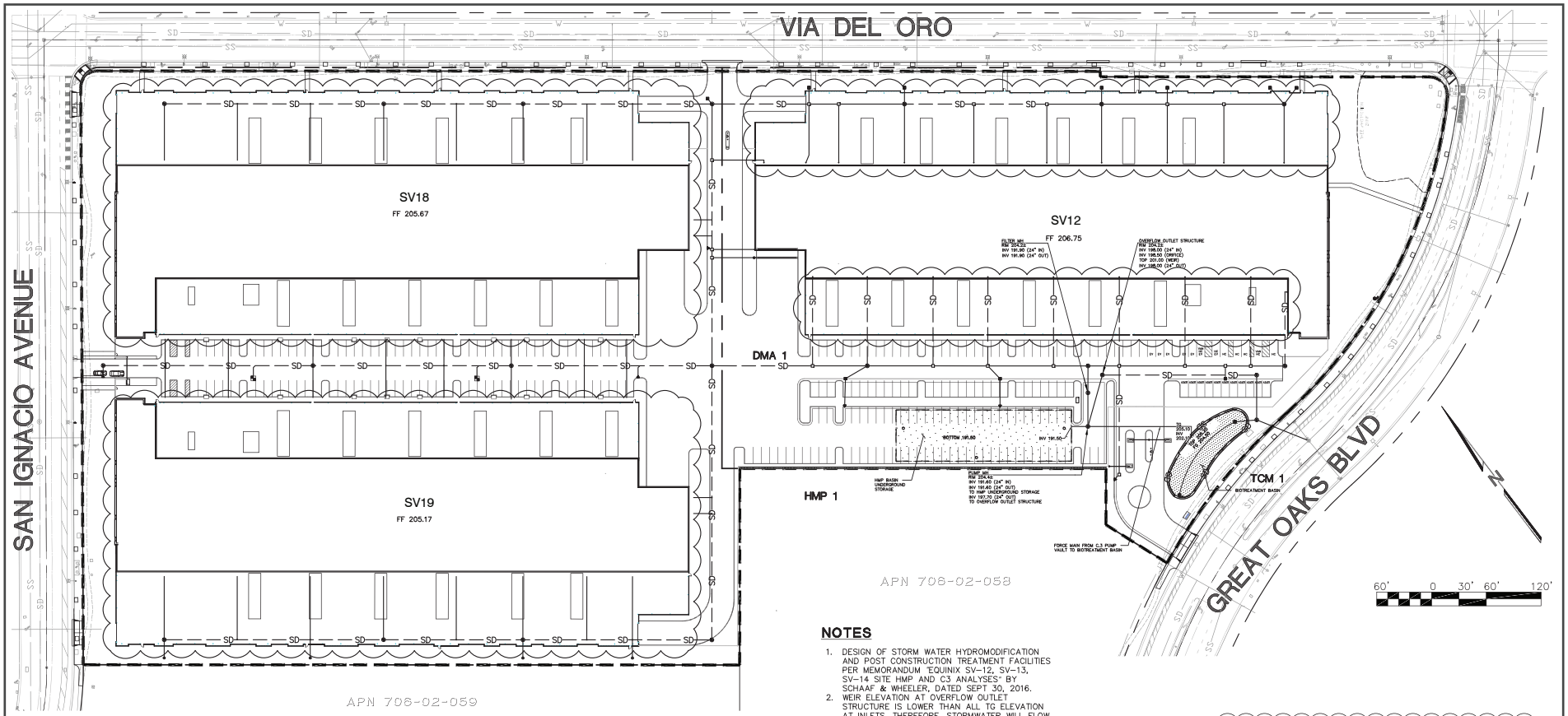


LANDSCAPE PLAN

FIGURE 2.3-2



TREE REMOVAL PLAN | FIGURE 2.3-3



NOTES

1. DESIGN OF STORM WATER HYDROMODIFICATION AND POST CONSTRUCTION TREATMENT FACILITIES PER MEMORANDUM "EQUINIX SV-12, SV-13, SV-14 SITE HMP AND C3 ANALYSES" BY SCHAAF & WHEELER, DATED SEPT 30, 2016.
2. WEIR ELEVATION AT OVERFLOW OUTLET STRUCTURE IS LOWER THAN ALL TG ELEVATION AT INLETS, THEREFORE, STORMWATER WILL FLOW OVER THE WEIR BEFORE IT BACK FLOWS OUT INTO THE DRIVE AISLE AND PARKING LOT.

STORMWATER HMP SUMMARY TABLE

DMA #	HMP #	Type	Volume Required (ac-ft) *	Volume Provided (ac-ft)	Riser Height (ft)	Invert Elevation	Orifice Size (in)	Location
1	1	Underground Storage	2.38	2.53	9.5	191.5	10	South Parking Lot

G:\Civil\1500\1D\Calcs\HMP.xls *See Note 1

LEGEND

BIORETENTION AREA

DRAINAGE MANAGEMENT AREA

TREATMENT CONTROL MEASURE SUMMARY TABLE

DMA #	TCM #	Location	Treatment Type	LID or Non-LID	Sizing Method	Drainage Area (s.f.)	Impervious Area (s.f.)	Pervious Area (Permeable Pavement) (s.f.)	Pervious Area (Other) (s.f.)	% Onsite Area Treated by LID or Non-LID TCM	Bioretention Area Required (s.f.)	Bioretention Area Provided (s.f.)	Overflow Riser Height (in)	Comments
1	1	Onsite	Bioretention lined* w/ underdrain	LID	2C. Flow: I = 0.2	779,465	645,983	0	133,482	100.00%	3,000	3,538	6	See Note 1
					Totals:	779,465	645,983	0	133,482	100.00%				

Footnotes:
* "Lined" refers to an impermeable liner placed on the bottom of a Bioretention basin or a concrete Flow-Through Planter, such that no infiltration into native soil occurs.

2. SURFACE DATA

2a. Enter the Project Phase Number (1, 2, 3, etc. or N/A if Not Applicable): N/A

2b. Total area of site: 17.89 acres

2c. Total Existing Impervious Surfaces on site: 16,100 sq.ft.

2d. Total area of site that will be disturbed: 17.89 acres

COMPARISON OF IMPERVIOUS AND PERVIOUS SURFACES AT PROJECT SITE	Existing Surface Area Disturbed sq.ft.	Proposed Surface To Be Replaced sq. ft. [1]	Proposed Surface New sq. ft. [2]	RESET CALCULATIONS
2.e. IMPERVIOUS SURFACES				
Roof Area	!	0	239,47	
Parking	!	0	45,857	
Sidewalks, Patios, Driveways, Etc.	9,052	221	258,57	
Public Streets	!	0	0	Total Proposed Impervious Surface (replaced + new)
Private Streets	!	349	101,442	
Online form auto-calculates: Impervious Surfaces Total	e.1. 1,832	e.2. 570	e.3. 64,413	e.4. 645,983
2.f. PERVIOUS SURFACES				
Landscaped Area	769633	124,220	9,262	
Pervious Paving	!	0	0	Total Proposed Pervious Surface (replaced + new)
Green Roof and other Pervious Surfaces	!	0	0	
Online form auto-calculates: Pervious Surfaces Total	f.1. 769,633	f.2. 124,220	f.3. 9262	f.4. 133,482

2.g. Percentage of Site's Impervious Area Replacement (e.2 +2.c) X 100: Online form auto-calculates: g. 3.54 %

[1] *Proposed Replaced Impervious Surface:* Replacement of an existing impervious surface with another impervious surface.
[2] *Proposed New Impervious Surface:* New impervious surface that will cover an existing pervious suface.

STORMWATER MANAGEMENT PLAN | FIGURE 2.3-4

- Source Control Measures:
    - Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers)
    - Good housekeeping (sweep pavement and clean catch basin)
    - Label storm drains
    - Connect covered trash/recycling enclosures and covered loading docks to the sanitary sewer

- Treatment Systems
    - Bioretention/biotreatment basin area approximately 3,000 square feet

2.3.2.7 *Water Use*

The GOSDC estimates that it will use approximately 1.3-acre feet of water for each phase of construction, and approximately 217 acre-feet per year for operation of each building. The theoretical maximum operational usage for each building is 343 acre-feet per year.

The site is within the jurisdiction and service territory of the Great Oaks Water Company and will supply the GOSDC with water. SV1 met with the South Bay Water Recycling Program (SBWRP) who explained that the Great Oaks Water Company will have to join its program in order for the SBWRP to serve recycled water to the site. SV1 met with Great Oaks Water Company who explained that they have no plans to join the SBWRP Program and as a condition of it serving the site with potable water, no recycled water could be delivered to the site. Therefore, recycled water is not feasible for the GOSDC.

2.3.2.8 *Utility Lines*

Existing Utility Lines

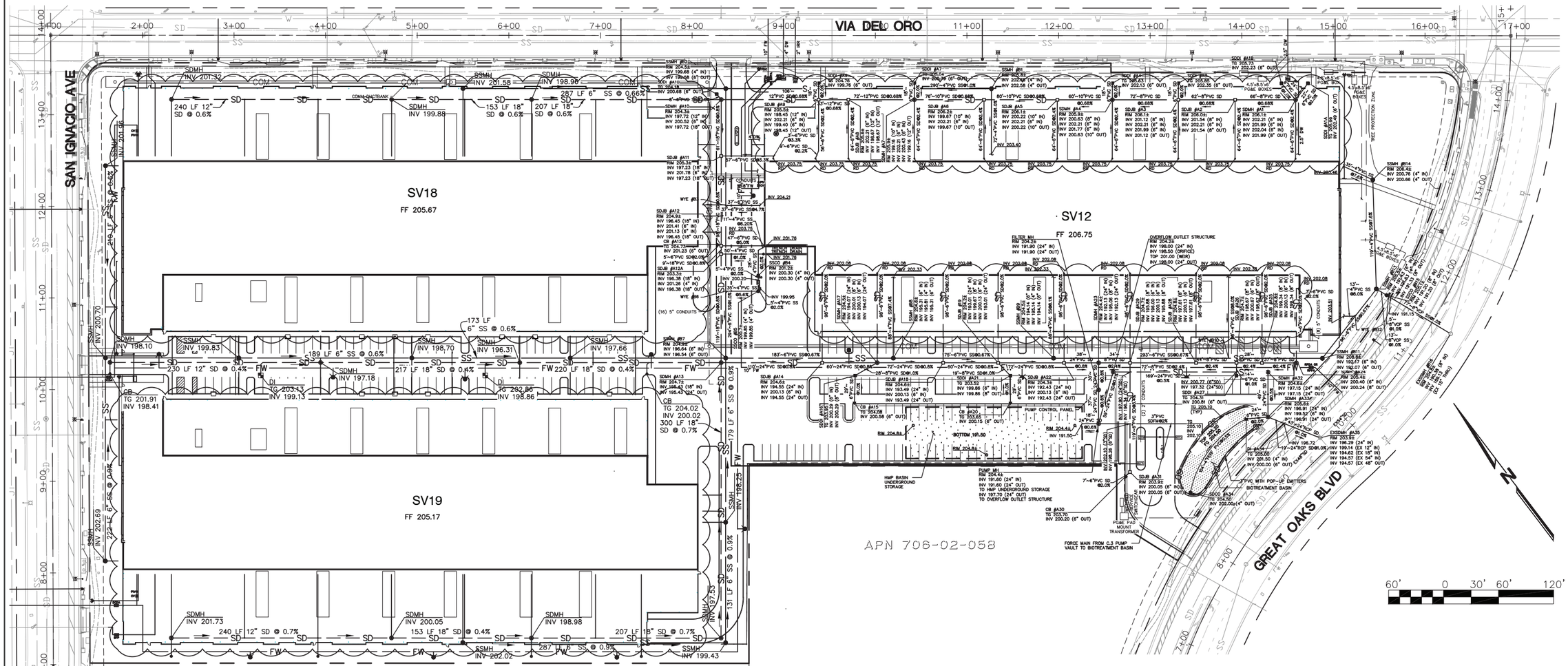
There are 48-inch diameter and 54-inch diameter storm drainpipes in Great Oaks Boulevard. There is a 48-inch diameter storm drainpipe along the entire San Ignacio Avenue frontage. In Via Del Oro, there are two storm drainpipes. One is an 18-inch diameter pipe flowing towards Great Oaks Boulevard and the other is a 24-inch diameter pipe flowing towards San Ignacio Avenue.

There are 12-inch diameter water pipes along Great Oaks Boulevard, Via Del Oro and San Ignacio Avenue.

There is a 15-inch diameter sanitary sewer pipe along the entire Great Oaks Boulevard frontage, an 8-inch diameter sanitary sewer pipe along the entire frontage of Via Del Oro and a 15-inch diameter sanitary sewer pipe along the entire San Ignacio Avenue frontage.

Proposed Utility Connections

The following sections describe the GOSDC facilities that will interconnect to the existing utilities. See Figure 2.3-5.



UTILITY PLAN | FIGURE 2.3-5

Storm Drainage

Drainage from the site will discharge from the hydromodification basin into an on-site 24-inch diameter pipe that will then flow out to an existing 48-inch diameter storm drain pipe in Great Oaks Boulevard at approximately eight feet deep.

Domestic Water

Each building will have a four-inch diameter and a 2.5-inch diameter domestic water service. Two 4-inch diameter and two 2.5-inch diameter domestic water services will connect to an existing 12-inch diameter water pipe in Via Del Oro. One four-inch diameter domestic water service will connect to an existing 12-inch diameter water pipe in San Ignacio Avenue located in an easement on the far side of the street, behind the west curb and gutter. The depth of domestic water services will be 4 feet minimum.

Fire Water

There will be four 10-inch diameter fire water services. One will connect to an existing 12-inch diameter water pipe in Great Oaks Boulevard. One will connect to an existing 12-inch diameter water pipe in Via Del Oro. Two will connect to an existing 12-inch diameter water pipe in San Ignacio Avenue located in an easement on the far side of the street, behind the west curb and gutter. The depth of fire water services will be 4 feet minimum.

Sanitary Sewer

Sewer discharge from the buildings will be collected in an on-site eight-inch diameter pipe and connect to an existing 15-inch diameter sanitary sewer pipe in Great Oaks Boulevard at approximately 15 feet deep.

2.3.2.9 *Electrical Power Delivery to Site Distribution Feeders*

The original project was approved with electrical power for the site coming from a new PG&E Santa Teresa Substation through new distribution feeders. The Santa Teresa Substation and the distribution feeders was reviewed by the City in its prior MND and approved as part of the prior approval. The substation and distribution feeders are not affected by the modifications proposed in this Application and the substation is currently under construction by PG&E.

2.3.3 Construction and Operation Workforce

The data center buildings will be constructed in three separate phases. One building will be constructed per phase, with construction over an approximately 13 to 15-month period per phase. The first phase is anticipated to start construction in late 2020. SV1 estimates approximately 200-225 construction workers during the peak month and an average of 125-150 construction workers for each phase.

SV1 anticipates that for operation, each building will have eight employees/external staff (i.e. security guards) per day shift, three per mid shift, and three per night shift. SV1 estimates that for each building, visitors will average about seven per day shift, two per midshaft, and one per night shift.

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 onsite unpaved surfaces shall be limited to 5 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: In accordance with current City policies and Municipal regulations, trees removed will be replaced at the ratios identified in Table 4.6-1.

- In the event replacement/mitigation trees cannot be accommodated on the site, tree removal shall be mitigated through a donation of $300 per mitigation tree to Our City Forest for in-lieu off-site tree planting in the community. The species of trees to be planted shall be determined in consultation with the City Arborist and the Department of Planning, Building and Code Enforcement. Trees removed shall be replaced at these ratios, or the applicant shall pay an in-lieu fee to Our City Forest to compensate for the loss of trees on-site.

PD BIO-2: In accordance with guidelines established by the International Society for Arboriculture, the following tree protection measures will be implemented to reduce impacts to the Heritage Tree:

- Establish an area surrounding the Heritage Tree to be protected during construction as defined by a circle concentric with each tree with a radius 1-1/2 times the diameter of the tree canopy drip line. This "tree protection zone" is established to protect the tree trunk, canopy and root system from damage during construction activities and to ensure the long-term survival of the protected trees. The tree protection zone shall: (1) ensure that

no structures or buildings, that might restrict sunlight relative to the existing conditions, will be constructed in close proximity to the trees; and (2) that no improvements are constructed on the ground around the tree within the tree protection zone, thus ensuring that there is sufficient undisturbed native soil surrounding the tree to provide adequate moisture, soil nutrients and oxygen for healthy root growth.

- Protect tree root systems from damage caused by (a) runoff or spillage of noxious materials while mixing, placing, or storing construction materials and (b) ponding, eroding, or excessive wetting caused by incident rainfall through use of the following measures during excavation and grading:
    - Excavation: Do not trench inside tree protection zones. Hand excavate under or around tree roots to a depth of three feet. Do not cut main lateral tree roots or taproots. Protect exposed roots from drying out before placing permanent backfill.
    - Grading: Maintain existing grades within tree protection zones. Where existing grade is two inches or less below elevation of finish grade, backfill with topsoil or native soil from the project site. Place fill soil in a single un-compacted layer and hand grade to required finish elevation.
    - Apply six-inch average thickness of wood bark mulch inside tree protection zones. Keep mulch six inches from tree trunks.
- Provide 48-inch tall orange plastic construction fencing fastened to steel T-posts, minimum six feet in length, using heavyweight plastic ratchet ties. Install fence along edges of tree protection zones before materials or equipment are brought on site and construction operations begin. Maintain fence in place until construction operations are completed and equipment has been removed from site.
- Provide temporary irrigation to all trees in protection zones using a temporary on-grade drip or bubbler irrigation system sufficient to wet the soil within tree protection zones to a depth of 30 inches per bi-weekly irrigation event.

Heritage Tree Design Recommendations

- Establish the horizontal and vertical elevation of the Heritage Tree. Include the trunk location and tag number on all plans.
- Design finish grades so that no water accumulates around the base of the trunk of the Heritage Tree.
- Allow the Consulting Arborist to review all future project submittals including grading, utility, drainage, irrigation, and landscape plans.
- Maintain the tree protection zone around the Heritage Tree as depicted on the Grading and Drainage Plan prepared by Ruth and Going. The tree protection zone shall be the limit of work.
- Route underground services including utilities, sub-drains, water or sewer around the tree protection zone. Where encroachment cannot be avoided, special construction techniques such as hand digging or tunneling under roots shall be employed where necessary to minimize root injury.

- Use only herbicides safe for use around trees and labeled for that use, even below pavement.
- Design the landscape around the Heritage Tree to be compatible with the cultural requirements of native oak trees.
- Any irrigation system must be designed so that no trenching will occur within the dripline of the Heritage Tree.

Pre-construction and demolition treatments and recommendations

- The demolition contractor shall meet with the Consulting Arborist before beginning work to discuss work procedures and tree protection.
- Install protection at the tree protection zone prior to demolition, grubbing, or grading.
- No entry is permitted into a tree protection zone without permission of the project superintendent.
- The Heritage Tree should be pruned to reduce the length and weight of long, horizontal branches. Remove stubs only when there is well-developed woundwood present at the attachment. Do not remove the large stub in the center of the crown. All pruning shall be completed by an ISA Certified Arborist or Tree Worker and adhere to the latest editions of the American National Standards for tree work (Z133 and A300) and International Society of Arboriculture Best Management Practices, Pruning.
- The Heritage Tree should also be evaluated for installation of new cables to support heavy horizontal limbs.

Tree protection during construction

- Any grading, construction, demolition or other work that occurs within the tree protection zone should be monitored by the Consulting Arborist.
- If injury occurs to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
- Fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the project superintendent.
- Construction trailers, traffic and storage areas must remain outside fenced areas at all times.
- No materials, equipment, soil, waste, or wash-out water may be deposited, stored, or parked within the tree protection zone (fenced area).
- Any tree pruning needed for clearance during construction must be performed by a qualified arborist and not by construction personnel.
- Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw.

2.4.3 Cultural and Tribal Cultural Resources

PD CUL-1: The following project-specific measures shall be implemented during construction to avoid significant impacts to unknown subsurface cultural resources:

- 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 Planning, Building, and Code Enforcement 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, Building, and Code Enforcement. 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 following project-specific measures shall be implemented during construction to avoid significant impacts to unknown subsurface cultural resources:

- 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.

- The project shall be constructed in conformance with the recommendations of the design-level geotechnical investigation prepared for the project, as well as at the 2017 California Building Code, or subsequent adopted codes.

2.4.5 Hazards and Hazardous Materials

PD HAZ-1: The project proposes to implement the following measures which will reduce the potential for tracking of impacted soil from the adjacent parcel to the project site.

- During construction activities (e.g. grading, vehicle travel, movement of equipment or materials, etc.), adjacent to APN 706-02-058, the project contractor shall fence the southwesterly adjacent parcel (APN 706-02-058) separately from the rest of the site.

2.4.6 Hydrology and Water Quality

PD HYD-1: The project 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 be covered trucks or maintain at least two feet of freeboard.
- All paved access roads, parking areas, staging areas and residential streets adjacent to the construction site 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 project proponent shall comply with the City of San José Grading Ordinance, including implementing erosion and dust control during site preparation and with the City of San José Zoning Ordinance requirements for keeping adjacent streets free of dirt and mud during construction.
- A Storm Water Permit shall be administered by the SWRCB. Prior to construction grading for the proposed land uses, the project proponents will file an NOI to comply with the General Permit and prepare a SWPPP which addresses measures that will be included in the project to minimize and control construction and post-construction runoff. Measures will include, but are not limited to, the aforementioned RWQCB Best Management Practices.
- The SWPPP shall be posted at the project site and shall be updated to reflect current site conditions.
- When construction is complete, a Notice of Termination for the General Permit for Construction shall be filed with the SWRCB. The Notice of Termination shall document that all elements of the SWPPP have been executed, construction materials and waste have been

properly disposed of, and a post-construction stormwater management plan is in place as described in the SWPPP for the site.

2.4.7 Noise and Vibration

PD NOI-1: The project proposes to implement the following measures to reduce temporary construction noise to less than significant levels.

- Construction activities within 200 feet of commercial uses shall be limited to the hours between 7:00 AM and 7:00 PM, Monday through Friday.
- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines within 200 feet of commercial uses is strictly prohibited. Equipment shall be turned off when not in use and the maximum idling time shall be limited to five minutes.
- Locate stationary noise-generating equipment such as air compressors or portable power generators at least 200 feet from adjacent office and commercial uses to the greatest extent feasible.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Notify all adjacent business other noise-sensitive land uses of the construction schedule, in writing, and provide a written schedule of "noisy" construction activities to the adjacent land uses.
- Designate a "disturbance coordinator" who will be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g. bad muffler, etc) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

SECTION 3.0 PROJECT INFORMATION

3.1 PROJECT TITLE

Great Oaks South Backup Generating Facility

3.2 LEAD AGENCY CONTACT

Leonidas 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

Equinix, Inc.
One Lagoon Drive, 4th Floor
Redwood City, CA 94065
Phone: (408) 617-4514
Attn: Masoud Zafaripour, Director and Project Manager
Email: mzafaripour@equinix.com

3.4 PROJECT LOCATION

123 Great Oaks Boulevard
San José, CA

3.5 ASSESSOR'S PARCEL NUMBER

706-02-057, 706-02-060

3.6 GENERAL PLAN DESIGNATION AND ZONING DISTRICT

Zoning District: *IP – Industrial Park*
General Plan: *IP – Industrial Park* and *TEC – Transit Employment Center*

3.7 PROJECT-RELATED APPROVALS, AGREEMENTS, AND PERMITS

City of San José Approvals:

- Special Use Permit/Amendment
- Grading Permit
- Building Permit(s)
- Tree Removal Permit(s)

Bay Area Air Quality Management District Approvals:

- Permit to Construct (diesel-fueled generators)

SECTION 4.0 ENVIRONMENTAL ANALYSIS

4.1 ENVIRONMENTAL ANALYSIS COMPONENTS

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.
-

4.2 ENVIRONMENTAL ANALYSIS METHODOLGY

As described in Section 1.2, the original GOSDC included a total of 21 generators, and EDC buildings were numbered 12, 13, and 14. It was approved by the City of San José (City) after conducting and Initial Study (IS) and adopting a Mitigated Negative Declaration (MND) pursuant to CEQA[6]. Copies of the MND are included in Appendix J. The 2017 MND evaluated the potential effects of the 21 generators as part of the GOSDC.

Equinix has filed this SPPE for the proposed GOSBGF and its modification from 21 generators, as approved in the MND, to 36 generators configured in three buildings and three small 0.5 MW

[6] References to MND include the Initial Study, Response to Comments, Mitigation Monitoring Program and all associated technical reports contained in the appendices.

generators. The increase in generation is to serve the ultimate buildout of all three phases of the GOSDC. Additionally, the three data center buildings were originally designated SV-12, SV-13, and SV-14. Part of the proposed change is to re-designate the buildings as SV-12, SV-18, and SV-19, respectively. The environmental baseline for evaluation of the potential impacts of the GOSBGF is, therefore, the existing environmental conditions onsite. The following environmental analysis will compare the proposed project's impacts to the 2017 MND.

The environmental evaluation below follows the CEQA guidelines and focuses on potential impacts of the additional generation of the GOSBGF, as proposed in this SPPE Application. Where the GOSBGF does not create new or additional impacts that are different from those evaluated in the MND, additional analysis is not required by CEQA. For each technical environmental area, a CEQA checklist is provided followed by supporting discussion and analysis, as needed. Where the MND proposed mitigation measures, the environmental analyses treat them as incorporated project features and, therefore, does not propose them as Conditions of Exemption to support the Commission's Decision to grant the SPPE. Additionally, each technical section contains an analysis of governmental agencies and permits that are necessary for the GOSBGF to comply with laws, ordinances, regulations or standards (LORS).

It is understood that the City will use the Commission's additional environmental analysis of the GOSBGF to supplement its current processing of the modifications to the GOSDC. Therefore, since the Commission does not have jurisdiction over the GOSDC, the potential effects of the modifications proposed by Equinix to the GOSDC are only discussed where they may affect or contribute to potential effects of the GOSBGF.

4.3 AESTHETICS

4.3.1 Environmental Setting

4.3.1.1 *Regulatory Framework*

State

Streets and Highway Code Sections 260 through 263

The California Scenic Highway Program (Streets and Highway Code, Sections 260 through 263) is managed by the California Department of Transportation (Caltrans). The program is intended to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. There are no state-designated scenic highways in San José. Interstate 280 from the San Mateo County line to State Route (SR) 17, which includes segments in San José, is an eligible, but not officially designated, State Scenic Highway.[7]

In Santa Clara County, the one state-designated scenic highway is SR 9 from the Santa Cruz County line to the Los Gatos City Limit. Eligible State Scenic Highways (not officially designated) include: SR 17 from the Santa Cruz County line to SR 9, SR 35 from Santa Cruz County line to SR 9, Interstate 280 from the San Mateo County line to SR 17, and the entire length of SR 152 within the County.

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to aesthetic resources and are applicable to the proposed project.

Envision San José 2040 Relevant Aesthetic Policies

Policy	Description
CD-1.1	Require the highest standards of architecture and site design, and apply strong design controls for all development projects, both public and private, for the enhancement and development of community character and for the proper transition between areas with different types of land uses.
CD-1.7	Require developers to provide pedestrian amenities, such as trees, lighting, recycling and refuse containers, seating, awnings, art, or other amenities, in pedestrian areas along project frontages. When funding is available, install pedestrian amenities in public rights-of-ways.
CD-1.8	Create an attractive street presence with pedestrian-scaled building and landscape elements that provide an engaging, safe, and diverse walking environment.

[7] California Department of Transportation. *California Scenic Highway Mapping System*. Accessed December 10, 2019. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

Envision San José 2040 Relevant Aesthetic Policies

Policy	Description
	Encourage compact, urban design, including use of smaller building footprints, to promote pedestrian activity through the City.
CD-1.11	To create a more pleasing pedestrian-oriented environment, for new building frontages, include design elements with a human scale, varied and articulated facades using a variety of materials, and entries oriented to public sidewalks or pedestrian pathways. Provide windows or entries along sidewalks and pathways; avoid blank walls that do not enhance the pedestrian experience. Encourage inviting, transparent facades for ground-floor commercial spaces that attract customers by revealing active uses and merchandise displays.
CD-1.23	Further the Community Forest Goals and Policies in this Plan by requiring new development to plant and maintain trees at appropriate locations on private property and along public street frontages. Use trees to help soften the appearance of the built environment, help provide transitions between land uses, and shade pedestrian and bicycle areas.
CD-1.27	When approving new construction, require the undergrounding of distribution utility lines serving the development. Encourage programs for undergrounding existing overhead distribution lines. Overhead lines providing electrical power to light rail transit vehicles and high tension electrical transmission lines are exempt from this policy.
CD-1.18	Encourage the placement of loading docks and other utility uses within parking structures or at other locations that minimize their visibility and reduce their potential to detract from pedestrian activity.
CD-10.2:	Require that new public and private development adjacent to Gateways, freeways (including U.S.101, I-880, I-680, I-280, SR17, SR85, SR237, and SR87), and Grand Boulevards consist of high-quality architecture, use high-quality materials, and contribute to a positive image of San José.
CD-10.3:	Require that development visible from freeways (including U.S.101, I-880, I-680, I-280, SR17, SR85, SR237, and SR87) be designed to preserve and enhance attractive natural and man-made vistas.

4.3.1.2 *Existing Conditions*

The approximately 18-acre main project site is flat, undeveloped, and consists of an open lot covered with non-native grassland. There is a large valley oak tree, a City designated Heritage Tree, at the corner of Via Del Oro and Great Oaks Boulevard. The project site is located in an urban area and bound by Via Del Oro (a two-lane roadway with a center turn lane) to the north, Great Oaks Boulevard (a four-lane roadway with a center median) to the east, vacant grassland land to the south, and San Ignacio Avenue (a two-lane roadway with a center turn lane) to the west. Surrounding development consists of one- to two-story modern office buildings, constructed with stucco, steel, and reflective glass windows. Street trees are planted on Via Del Oro, Great Oaks Boulevard, and San Ignacio Avenue on the opposite side of the street (not along the project frontage).

Surrounding development consists of one- to two-story modern office buildings, constructed with stucco, steel, and reflective glass windows. Street trees are planted on Via Del Oro, Great Oaks Boulevard, and San Ignacio Avenue on the opposite side of the street (not along the project frontage). Existing views of the project site and surrounding area are shown on Photos 1-6 on the following pages.

4.1.1.2 *Scenic Views and Resources*

The City has many scenic resources including the hills and mountains that frame the Valley floor, the baylands, and the urban skyline itself, particularly high-rise development. The project site is flat and primarily visible from only the immediate vicinity and SR 85. While views of the Diablo foothills to the east and the Santa Cruz Mountains to the west are obscured by existing, surrounding development, the Santa Teresa Hills, located to the south, are visible from both sites. SR 85 is designated as a scenic urban throughway under the General Plan but is not a designated state scenic highway.[8] The project area is mostly developed and urban. There are no scenic resources on the project site; however, there are street trees located along Via Del Oro.

[8] California Department of Transportation. *California Scenic Highway Mapping System*. Accessed December 10, 2019. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

Photo 1 View of the project site from the corner of San Ignacio Avenue and Via Del Oro, facing east.

Photo 2 View of the surrounding area across San Ignacio Avenue.

PHOTOS 1 & 2

Photo 3 View of the project site from the corner of Via Del Oro and Great Oaks Boulevard, facing west.

Photo 4 View of the surrounding area at the corner of Great Oaks and Via Del Oro, across from the project site.

PHOTOS 3 & 4

Photo 5 View of the project site and surrounding area from Great Oaks Boulevard, facing northwest.

Photo 6 View of the residences south of the project site.

PHOTOS 5 & 6

4.3.2 Impact Discussion

	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 of the site and its surroundings? [9] 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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The proposed GOSDC project includes minimal changes to the overall design and site layout of the approved 2017 project. The original configuration of the GOSDC consisted of three, two-story buildings, each encompassing 191,000 square feet, for a total of approximately 573,000 square feet. The data center buildings were designated SV-12, SV-13, and SV-14. Refer to the Figure 3.1-1 in the 2017 MND located in Appendix K.

Since the 2017 approval by the City, the GOSDC project has been reconfigured. The modified project would consist of three, two-story buildings encompassing a total building square footage of roughly 547,050 gross square feet, and 11 water chillers per building. The reconfigured GOSDC would be constructed in three phases and the designations for Buildings SV-14 and SV-13 will be changed to SV-18 and SV-19, respectively.

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

Impact AES-1:	The project would not have a substantial adverse effect on a scenic vista. **(Less than Significant Impact)**

As described in the 2017 MND, there are no scenic vistas within the City of San José. The project, therefore, would not have a substantial adverse effect on a scenic vista. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant 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. **(Less than Significant Impact)**

As described in the 2017 MND, the site is not visible from a designated state scenic highway. The project, therefore, would not substantially damage scenic resources within a state scenic highway. This conclusion is consistent with the findings of the 2017 MND. **(Less Than Significant Impact)**

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, by their nature, subjective. Opinions as to what constitutes a degradation of visual character will differ among individuals. One of the best available means 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, consistent with the assumptions in the General Plan.

Construction of data center buildings would change the visual character of the site when viewed from the surrounding area. The site is currently vacant with non-native grassland would be developed with three, two-story data center buildings that would each be approximately 182,350 square feet in size with a building footprint of approximately 92,000 square feet. Each building would contain server cabinets on each floor and three loading docks for shipping and receiving uses. An office component would be attached to the main building to provide customer care, security, building operations, and flex office functions. The data center buildings would be approximately 49 feet in height to the top of the building parapet except for the office portion of the building where the top of parapet would be approximately 53 feet in height. See Elevation Plan in Figure 2.3-1. Additionally, each of the generation yards would be located adjacent to the building it serves, as shown in Figure 2.2-1. The design of the proposed project would be reviewed during the City permit review process to ensure compatibility with surrounding development and visual quality of the built environment. Landscaping would be planted throughout the main project site in accordance with General Plan policies. Approximately 133,500 square feet of landscaping is proposed around the data center buildings. In addition, street trees would be planted along the project frontages to help soften views of the project site from the surrounding area. The large Heritage valley oak tree would be retained at the northwest corner of Great Oaks Boulevard and Via del Oro and trees would also be planted along

project frontages to create a more pedestrian-friendly environment. This would soften the visual mass and height of the data center buildings when viewed from surrounding streets. For these reasons, the proposed project would not substantially degrade the existing visual character or quality of the site. This conclusion is consistent with the findings of the 2017 MND. **(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)**

As described in the 2017 MND, future development on the project site would incrementally increase light and glare in the surrounding area due to new building surfaces, security lighting, and vehicles traveling to and from the project site. It is anticipated that the light and glare created by future development on-site would be similar to light and glare emitted from existing development in the surrounding area. The proposed project would be subject to adopted policies and regulations pertaining to light and glare impacts; compliance with these policies would not substantially increase nighttime light levels. For these reasons, future development on the project site would not result in substantial adverse light and glare impacts. This conclusion is consistent with the findings of the 2017 MND. **(Less Than Significant Impact)**

4.4 AGRICULTURE AND FORESTRY RESOURCES

4.4.1 Environmental Setting

4.4.1.1 *Regulatory Framework*

State

Farmland Mapping and Monitoring Program

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) assesses the location, quality, and quantity of agricultural land and conversion of these lands over time. Agricultural land is rated according to soil quality and irrigation status. The best quality land is called Prime Farmland. In CEQA analyses, the FMMP classifications and published county maps are used, in part, to identify whether agricultural resources that could be affected are present on-site or in the project area.[10]

California Land Conservation Act

The California Land Conservation Act (Williamson Act) enables local governments to enter into contracts with private landowners to restrict parcels of land to agricultural or related open space uses. In return, landowners receive lower property tax assessments. In CEQA analyses, identification of properties that are under a Williamson Act contract is used to also identify sites that may contain agricultural resources or are zoned for agricultural uses.[11]

Fire and Resource Assessment Program

The California Department of Forestry and Fire Protection (CAL FIRE) identifies forest land, timberland, and lands zoned for timberland production that can (or do) support forestry resources.[12] Programs such as CAL FIRE's Fire and Resource Assessment Program and are used to identify whether forest land, timberland, or timberland production areas that could be affected are located on or adjacent to a project site.[13]

4.4.1.2 *Existing Conditions*

The Santa Clara County Important Farmland 2018 map designates the project site as *Other* and *Urban and Built-Up Land*. *Urban and Built-Up Land* is defined as land occupied with a building density of at one unit to 1.5 acres or approximately six structures per 10-acre parcel. Common

[10] California Department of Conservation. "Farmland Mapping and Monitoring Program." Accessed November 12, 2019. http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx.
[11] California Department of Conservation. "Williamson Act." http://www.conservation.ca.gov/dlrp/lca.
[12] Forest Land is land that can support 10 percent native tree cover and allows for management of forest resources (California Public Resources Code Section 12220(g)); Timberland is land not owned by the federal government or designated as experimental forest land that is available for, and capable of, growing trees to produce lumber and other products, including Christmas trees (California Public Resources Code Section 4526); and Timberland Production is land used for growing and harvesting timber and compatible uses (Government Code Section 51104(g)).
[13] California Department of Forestry and Fire Protection. "Fire and Resource Assessment Program." Accessed November 12, 2019. http://frap.fire.ca.gov/.

examples of *Urban and Built-Up Land* are residential, industrial, commercial purposes, golf courses, landfills, airports, and other utility uses.

Land designated as *Other* is not included in any other mapping category. Common examples include low density rural developments, brush, timber, wetland and riparian areas not suitable for livestock grazing, confined livestock, poultry, or aquaculture facilities, strip mines, borrow pits, and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is also mapped as *Other*.[14]

The project site is not zoned or used for agricultural purposes, nor is it the subject of a Williamson Act contract.[15] The project site is located in an urban area of San José; there are no agricultural or forestry uses in the project area.

4.4.2 Impact Discussion

	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?	☐	☐	☐	☒

[14] California Department of Conservation. *Santa Clara County Important Farmland 2016 Map*. Published 2018.
[15] California Department of Conservation, Division of Land Resource Protection. *Santa Clara County Williamson Act 2016*. https://www.conservation.ca.gov/dlrp/wa/Pages/stats_reports.aspx

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 2018 Map, the project site is designated as *Urban and Built-Up Land.* The project, therefore, would not convert farmland to non-agricultural use. This conclusion is consistent with the findings of the 2017 MND. **(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 *IP – Industrial Park*. 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. This conclusion is consistent with the findings of the 2017 MND. **(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 *IP – Industrial Park.* The project, therefore, would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. This conclusion is consistent with the findings of the 2017 MND. **(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)**

As described in the 2017 MND, 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. This conclusion is consistent with the findings of the 2017 MND. **(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 and in the 2017 MND, 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. This conclusion is consistent with the findings of the 2017 MND. **(No Impact)**

4.5 AIR QUALITY

The following discussion is based in part information contained in the Air Quality Impact Assessment prepared for the project by Atmospheric Dynamics, Inc. in January 2020. A copy of the report is attached to this Application as Appendix A.

This section presents the evaluation of emissions and impacts resulting from the construction and operation of GOSBGF which supports the Great GOSDC, 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 BAAQMD. 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 (DPM)
Appendix AQ 2 – Engine Specification Brochures and Certification Information
Appendix AQ 3 – Modeling Support Data
Appendix AQ 4 – CalEEMod Analysis for Construction and Miscellaneous Operational Emissions
Appendix AQ 5 – Risk Assessment Support Data

4.5.1 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.

4.5.1.1 *Existing Air Quality*

In 1970, the United States Congress instructed the US 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 US 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 US 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 (SO2), carbon monoxide (CO), ozone (O3), nitrogen dioxide (NO2), sub 10-micron particulate matter (PM10), sub 2.5-micron particulate matter (PM2.5), 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 4.5-1 presents the current federal and state ambient quality standards.

Table 4.5-1: 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 (NOx). POC and NOx 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 NOx 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 10 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 10 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 Table AQ1-1 and AQ1-2. Tables in the emissions section below present the emissions from the diesel engines at the GOSBGF facility. TAC emissions are well below the major source thresholds; therefore, the facility is not a major source subject to MACT.

Attainment Status

The EPA designates the attainment status of regional areas with respect to federal air quality standards, while the 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 in 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 GOSBGF and GOSDC site is located within Santa Clara County, under the jurisdiction of the BAAQMD. Table 4.5-2 summarizes the attainment status for each of the criteria pollutants in the BAAQMD with regards to both the federal and state standards.

Table 4.5-2: 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 GOSBGF 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 4.5-3 and Table 4.5-4, which provide the background ambient air concentrations of criteria pollutants for the previous three (3) 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 4.5-4 and used for comparison to the NAAQS and CAAQS.

Table 4.5-3: Measured Ambient Air Quality Concentrations by Year							
Pollutant	**Units**	**Avg Time**	**Basis of Yearly/ Design Concentrations**	**2016**	**2017**	**2018**	**Design**
Ozone	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	87	121	78	121
Ozone	ppb	8-Hr	CAAQS-1st Highs/3-yr Max	66	98	61	98
Ozone	ppb	8-Hr	NAAQS-4th Highs/3-yr Avg	61	75	53	63
NO_2	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	51	68	86	86
NO_2	ppb	1-Hr	NAAQS-98thos/3-yr Avg	42	50	59	50.3
NO_2	ppb	Annual	CAAQS/NAAQS-AAM/3-yr Max	11	12	13	13
CO	ppm	1-Hr	CAAQS-1st Highs/3-yr Max	2.0	2.1	2.5	2.5
			NAAQS-2nd Highs/3-yr Max	1.9	2.0	2.4	2.4
CO	ppm	8-Hr	CAAQS-1st Highs/3-yr Max	1.4	1.8	2.1	2.1
			NAAQS-2nd Highs/3-yr Max	1.3	1.7	2.0	2.0
SO_2	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	1.8	3.6	6.9	6.9
			NAAQS-99thos/3-yr Avg	2	3	3	2.7
		24-Hr	CAAQS-1st Highs/3-yr Max	0.8	1.1	1.1	1.1
			NAAQS-2nd Highs/3-yr Max	0.8	1.0	1.1	1.1
		Annual	CAAQS/NAAQS-AAM/3-yr Max	0.19	0.20	0.21	0.21
PM_{10}	µg/m^3	24-Hr	CAAQS-1st Highs/3-yr Max	41	70	122	122
			NAAQS-2nd Highs/3-yr 4th High	35	67	111	98
		Annual	CAAQS-AAM/3-yr Max	18.5	21.6	23.1	23.1
$PM_{2.5}$	µg/m^3	24-Hr	NAAQS-98th%/3-yr Avg	19	34	73	42
		Annual	CAAQS –AAM/3-yr Max	8.4	9.5	12.8	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 and USEPA AIRS Data Reports website for NAAQS.							

Table 4.5-4: 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
Notes: Values for 158 East Jackson Street, San Jose, 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.	

4.5.1.2 *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 and its subsequent amendments (CAA). As required by the federal CAA, NAAQS have been established for the criteria pollutants described above.

New Source Performance Standards

The GOSBGF 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.

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.

BAAQMD Air Quality Standards and Regulations

The section briefly describes the regulations which would apply to the GOSBGF 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 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 ppmw

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

Additionally, the use of diesel particulate filters on the engines will reduce the PM emissions to less than or equal to 0.015 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. The offset provisions of Regulation 2 Rule 2 that apply to the proposed project are 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 10 tons per year (tpy). For sources which emit NO_x or VOC in excess of 10 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 10 tpy, so VOC offsets are not required under the District NSR rule. NO_x emissions are greater than 35 tpy, and as such, the applicant must secure NO_x offsets at a ratio of 1.15:1 for any un-offset cumulative increase in emissions. The NO_x 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 applicant notes that the worst case PM_{10}, $PM_{2.5}$, and SO_2 emissions from the GOSBGF are 0.161, 0.161, and 0.05 tons per year, respectively. The applicant believes that 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% O_2 dry basis): NO_x 110 ppm and CO 310 ppm. But, 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 AQMD:
    - 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.

State

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 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 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):

- Ozone and the primary ozone precursor pollutants (VOCs and NO_x)
- Particulate matter (PM_{10} and $PM_{2.5}$), as well as their precursors

- TACs/HAPs
- Greenhouse gases

4.5.2 Impact Discussion

	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: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the determinations.

Note to reader: Where the following analysis applies to both the GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

4.5.2.1 *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 4.5-5.

Table 4.5-5: 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 µg/m^3	0.3 µg/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 µg/m^3		
Source: BAAQMD CEQA Guidelines, May 2017. *CO_2e = carbon dioxide equivalents			

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

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

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

For these reasons, the project would have a less than significant impact. **(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 with Mitigation Incorporated)**

The GOSBGF 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.
- 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 10 tons/yr. 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. Under either option, the NOx emissions from the GOSBGF will be offset to mitigate the emissions increase.
- 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 proposed project's annual PM_{10}, $PM_{2.5}$, and SO_2 emissions from the GOSBGF are 2.16, 2.16, and 0.02 tons per year respectively. The Applicant believes that mitigation for emissions at these low emissions levels is not warranted, and such mitigation is not required under Regulation 2 Rule 2.

- See the mitigation discussion under NSR issues above.

For these reasons, the project would have a less than significant impact with mitigation incorporated. **(Less than Significant Impact with Mitigation Incorporated)**

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

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

- The air quality impact analysis presented under Section 4.5.2.2 shows that the GOSBGF 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 under Section 4.5.2.2 indicate that the emissions of toxic air contaminants from the GOSBGF processes will not cause a significant risk to any sensitive or non-sensitive receptor with respect to cancer or chronic impacts.

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

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

The GOSBGF 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 GOSBGF and GOSDC are not one of the project types listed in the BAAQMD CEQA guidelines as producing odors that may affect offsite receptors.
- The applicant 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.

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

4.5.2.2 *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 GOSBGF 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 GOSBGF are negligible but are included in the emission calculations for the GOSDC. Offsite construction emissions will be derived primarily from materials transport to and from the site, and worker travel. Emissions from the 47-month construction period were estimated using the CalEEMod program. Estimated criteria pollutant construction emissions for the project are summarized in Table 4.5-6. Construction support data and the 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 but would occur within 1,000 feet from the nearest sensitive receptor, community health risk impacts from construction activities were evaluated. See the construction HRA results in the Public Health section of this analysis.

Table 4.5-6: Criteria Pollutant Emissions from Mitigated Construction Activities

Scenario	NO_x	CO	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2e*
Max Const Year by Pollutant	2021	2021	2022	2021	2020/21	2020/21	NA
Max Project Emissions, Tons/Yr	3.93	4.41	4.33	0.0086	0.205 exhaust 0.294 fugitives	0.203 exhaust 0.149 fugitives	830*
Avg. Daily Emissions, Lbs	29.77	33.41	32.84	0.065	1.55 exhaust 2.27 fugitives	1.54 exhaust 1.14 fugitives	NA
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 47 months, or ~1034 workdays (22 days/month).
Max construction year is 12 months at 22 days/month = 264 workdays.
*CO_2e converted from MT to short tons.
Source: ADI CalEEMod analysis, January 2020.

As shown in Table 4.5-6, 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). Community health risks from construction activities are discussed in the Public Health section of this analysis.

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 onsite unpaved surfaces shall be limited to 5 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.

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 GOSBGF. 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. Mitigated secondary operational emissions from facility upkeep, such as architectural coatings, consumer product use, landscaping, water use, waste generation, natural gas use for comfort heating, employee vehicle trips, and electricity use, were considered not significant as summarized in Table 4.5-15.

Each of the primary emission sources are described in more detail below.

Stationary Sources

The project's 39 standby diesel generators will be comprised of the following equipment:

- 36 – Cummins QSK95-G9 Diesel-fired engines, rated at 4631 HP (3250 kWe) at 100% Load
- 3 – Cummins QSX15-G9 Diesel-fired engines, rated at 731 HP (500 kWe) at 100% Load

The generators proposed for installation are made by Cummins, with a certified Tier 2 rating. 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 $PM_{10/2.5}$ emissions. For conservative evaluation purposes, it was assumed that testing (weekly, monthly, quarterly, annual, and special testing) would occur for no more than 20 hours per year. Fifty 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. The Applicant is proposing an annual readiness and maintenance testing schedule not to exceed 20 hours per year per engine. Maintenance and readiness testing usually occurs at loads ranging from 1 to 100% 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. Each of the engines were evaluated for the following emissions scenarios with Scenario 2 emissions used for the comparison to the BAAQMD CEQA and NSR thresholds:

- Scenario 1 - Declared emergency operations, 100 hrs/yr, Tier 2 emissions factors, 100% load, with no DPF controls. (BAAQMD Policy limit.) These emissions are not subject to NSR applicability.
- Scenario 2 - Maintenance/Readiness operations, 20 hrs/yr, Tier 2 emissions factors, 100% load, with no DPF controls. (less than the ATCM limit.)
- Scenario 3 – Declared emergency operations, 100 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 100% load, with no DPF controls. (BAAQMD Policy limit.) These emissions are not subject to NSR applicability.
- Scenario 4 - Maintenance/Readiness operations, 20 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 100% load, with no DPF controls. (less than the ATCM limit.)
- Scenario 5 - Maintenance/Readiness operations, 20 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 10% load, with no DPF controls. (less than the ATCM limit.)
- Scenario 6 - Maintenance/Readiness operations, 20 hrs/yr, Cummins nominal performance emissions factors, 1% load, with no DPF controls. (less than the ATCM limit.)

The tables which follow present emissions summaries for the Cummins engines for each of the scenarios noted above in terms of the worst case hourly, daily, and annual emissions. Maximum daily emissions (Scenarios 2 and 4) are based on the assumption that only six of the engines will be tested

on any day (and the engines will not be run or tested concurrently). Scenarios 1 and 3 assume all engines are operated during emergency operations.

Table 4.5-7: Scenario 1 Emissions Summary for the Engines (100 Hours)						
Period	**NOx**	**CO**	**VOC**	**SO2**	**$PM_{10}/PM_{2.5}$**	**CO_2e**
QSK95						
Max Hourly, lbs	1,654	956	110	1.8	5.5	-
Max Daily, lbs	39,695	22,935	2,646	44	132	-
Max Annual, tons	82.7	47.8	5.51	0.09	0.28	9,057
QSX15						
Max Hourly, lbs	21.8	12.6	1.45	0.02	0.07	-
Max Daily, lbs	522.2	301.7	34.8	0.6	1.74	-
Max Annual, tons	1.09	0.63	0.07	0.005	0.005	116
Total All Engines, tons/yr	**83.8**	**48.4**	**5.58**	**0.01**	**0.29**	**9,173**
Scenario 1 - Declared emergency operations, 100 hrs/yr, Tier 2 emissions factors, 100% load, without DPF controls.						

Table 4.5-8: Scenario 2 Emissions Summary for the Engines (20 Hours)						
Period	**NOx**	**CO**	**VOC**	**SO2**	**$PM_{10}/PM_{2.5}$**	**CO_2e**
QSK95						
Max Hourly, lbs	45.94	26.55	3.06	0.05	0.153	-
Max Daily, lbs	275.7	159.3	18.4	0.31	9.19	-
Max Annual, tons	16.54	9.56	1.10	0.02	0.55	1,811
QSX15						
Max Hourly, lbs	7.25	4.2	0.48	0.01	0.242	-
Max Daily, lbs	21.76	12.57	1.45	0.024	0.73	-
Max Annual, tons	0.22	0.13	0.01	0.005	0.01	23.1
Total All Engines, tons/yr	**16.76**	**9.69**	**1.11**	**0.025**	**0.56**	**1,834**
Scenario 2 - Maintenance/Readiness operations, 20 hrs/yr, Tier 2 emissions factors, 100% load, without DPF controls.						

Table 4.5-9: Scenario 3 Emissions Summary for the Engines (100 Hours)						
Period	**NOx**	**CO**	**VOC**	**SO2**	**$PM_{10}/PM_{2.5}$**	**CO_2e**
QSK95						
Max Hourly, lbs	1606.2	183.8	84.54	1.84	5.51	-
Max Daily, lbs	38,548	4,411	2,029	44	132	-
Max Annual, tons	80.31	9.2	4.23	0.09	0.28	9,057
QSX15						
Max Hourly, lbs	17.94	1.93	0.92	0.024	0.387	-
Max Daily, lbs	430.5	46	22	0.6	9.28	-
Max Annual, tons	0.9	0.10	0.05	0.005	0.02	116
Total All Engines, tons/yr	**81.2**	**9.3**	**4.3**	**0.1**	**0.30**	**9,173**
Scenario 3 – Declared emergency operations, 100 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 100% load, without DPF controls.						

Table 4.5-10: Scenario 4 Emissions Summary for the Engines (20 Hours)						
Period	**NOx**	**CO**	**VOC**	**SO2**	**$PM_{10}/PM_{2.5}$**	**CO_2e**
QSK95						
Max Hourly, lbs	44.62	5.11	2.35	0.05	1.123	-
Max Daily, lbs	267.7	30.6	14.1	0.31	6.74	-
Max Annual, tons	16.1	1.84	0.85	0.02	0.404	1,811
QSX15						
Max Hourly, lbs	5.98	0.65	0.31	0.01	0.129	-
Max Daily, lbs	17.94	1.93	0.92	0.024	0.387	-
Max Annual, tons	0.18	0.02	0.01	0.005	0.004	23
Total All Engines, tons/yr	**16.3**	**1.86**	**0.86**	**0.025**	**0.41**	**1,834**
Scenario 4 – Maintenance/Readiness operations, 20 hrs/yr, EPA 40 CFR 89 D2 cycle weighted emissions factors, 100% load, without DPF controls.						

Additional low load emissions data for Scenarios 5 and 6 (10% and 1% load cases respectively), are presented in Appendix AQ-1. These scenarios were not used for establishing total facility emissions but were used in the screening modeling assessments.

Table 4.5-11 presents maximum daily and annual emissions data with Scenario 2 emissions used for comparison to the BAAQMD CEQA and NSR thresholds.

Table 4.5-11: 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	N/A	54	N/A	82	54
Worst Case Daily Emissions[1]	275.7	159.3	18.4	0.31	24.9	24.9
Significance Threshold Exceeded	Yes	N/A	No	N/A	No	No
Scenario	**Tons/Yr**					
	NO_x	**CO**	**VOC**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
BAAQMD CEQA Thresholds	10	N/A	10	N/A	15	10
Worst Case Annual Emissions[2]	16.8	9.7	1.1	0.025	3.42	3.42
Significance Threshold Exceeded	Yes	N/A	No	N/A	No	No

Emissions represent the summation of the QSK95 and QSX15 engines for the periods defined.

[1] Based on the emissions from Scenario 2 for a 6-engine test day for the QSK95 with cooling tower at 24-hour/day.

[2] Based on the emissions from Scenario 2 for the QSK95 and QSX15 engines combined with cooling tower at 8,760 hrs/yr.

The following should be noted with respect to Table 4.5-11 above.

- NO_x emissions exceed the BAAQMD CEQA significance levels on the days when the 6 engine readiness tests occur, and on a TPY basis (total emissions from all engines).
- With Scenario 2 emissions used for the comparison to the BAAQMD CEQA and NSR thresholds, 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 4.5-12 presents the summation of emissions for all engines for the maximum of the scenarios noted above, i.e., Scenario 3 plus Scenario 4 to meet the 150 hours per year criteria per the BAAQMD permitting policy criteria.

Table 4.5-12: BAAQMD 150 Hour per Year Emissions Summation (tons per year)

Engines	NOx	CO	VOC	SO2	$PM_{10}/PM_{2.5}$	CO_2e
QSK95	96.37	11.03	5.07	0.11	2.43	10,868
QSX15	1.08	0.116	0.055	0.001	0.023	139
Total	97.5	11.15	5.13	0.11	2.5	1,007

*Cooling tower emission not included as they are an exempt source category
Based on 40 CFR 89 D2 cycle weighted emissions.
These values are NOT the NSR applicability values.

Table 4.5-13 presents data on the DPM emissions levels (worst case) for the QSK95 and QSX15 engines.

Table 4.5-13: Toxic Air Contaminant (DPM) Emissions from the Proposed Engines (per engine basis)

Scenario	QSK95
Maximum Annual, lbs/yr	22.46
Maximum Hourly, lbs	1.123
Scenario	**QSX15**
Maximum Annual, lbs/yr	2.58
Maximum Hourly, lbs	0.129

Notes: 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 20 hours per year, 100% load, EPA D2 cycle weighted emissions factors without DPF controls.

Table 4.5-14 presents the hourly and annual fuel use values for the maximum operational scenario as outlined above.

Table 4.5-14: Engine Fuel Use Values	
Scenario	**Fuel Use, gallons (per engine basis)**
QSK95 Maximum Annual, gals/yr	4,440
QSK95 Maximum Hourly, gals/hr	222
QSX15 Maximum Annual, gals/yr	680
QSX15 Maximum Hourly, gals/hr	34
Total Annual Fuel Use (All Engines)	
Annual Fuel Use, gals/yr	161,880

Building Cooling System

Additionally, each of the data center buildings (3 total) will be served by an air conditioning system utilizing a wet, induced draft cooling tower for heat rejection from the server floors and air cooling. These cooling towers are not associated with the backup generator engines, and they are not used in any way to cool process water for the engines. The three (3) cooling towers will be identical, described as follows:

- Three Evapco, Model AT112-4P20
- Water circulation rate: 2620 gpm/cell
- 11 cells per tower (each cell with a dedicated fan) but only 9 operational at any one time
- Fan acfm: 169,100
- Drift rate: 0.001%
- Makeup water TDS: ~369 ppm
- Water supplier: City of San José

The cooling system operates as follows:

- Annual Average Conditions
    - 9 out of 11 cells
    - 14,148 gpm per tower (60 percent of maximum capacity)
    - $PM_{10/2.5}$ emissions = 9.4 lbs/day all three towers
    - $PM_{10/2.5}$ emissions = 1.715 TPY all three towers
- Maximum Day Conditions
    - 9 out of 11 cells
    - 23,580 gpm per tower
    - $PM_{10/2.5}$ emissions = 15.7 lbs/day all three towers

- $PM_{10/2.5}$ emissions = 2.859 TPY all three towers

See Appendix AQ-1 for the emissions estimates for these cooling towers.

Miscellaneous Operational Emissions

Miscellaneous mitigated emissions from operational activities such as worker commute 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 4.5-15.

Table 4.5-15: Miscellaneous Mitigated Operational Emissions

Scenario	Lbs/Day					
	NO_x	**CO**	**VOC**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
BAAQMD CEQA Thresholds	54	N/A	54	N/A	82	54
All Sources Lbs/avg day	3.62	3.45	19.5	0.023	0.26	0.26
TPY						
BAAQMD CEQA Thresholds	10	N/A	10	N/A	15	10
All Sources Tons/yr	0.66	0.63	3.65	0.0042	0.048	0.048
Exceeds Thresholds	No	N/A	No	N/A	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. PM10 and PM2.5 are exhaust emissions only.
Average CO_2e emissions from operations are 5257 MT/yr, or 5783 short tons/yr.
Source: ADI CalEEMod analysis, January 2020.

Air Quality Impact Analysis

The 18-acre project site, located at 123, 127, and 131 Great Oaks Boulevard in the City of San José (Santa Clara County), is currently vacant and undeveloped. The project proposes to construct improvements on the site consisting of three (3) buildings, parking areas, and an emergency backup generation facility (GOSBGF). The three (3) GOSDC buildings, which would be approximately 182,350 square feet each, would house computer servers for private clients in a secure and environmentally controlled structure as well as staff office space. The GOSBGF would be designed to provide approximately 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 GOSBGF 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 GOSBGF 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 GOSBGF 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 GOSBGF project terrain area, including the surrounding properties, plume impaction effects would not be expected to occur. AERMOD can also consider receptors located above the receptor base elevation, called flagpole receptors. Flagpole receptors were not used in the modeling analyses.

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 GOSBGF 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 the urban dispersion option (using a recent Santa Clara County census population of 1,938,153). Land use in the immediate area surrounding the project site can be characterized as "urban". This is based on the land uses within the area circumscribed by a three (3) kilometer 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 (1) hour to annual based on the meteorological data were calculated for each GOSBGF 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" with impervious surfaces comprising more than 50% of the urban areas.

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 were processed by BAAQMD with AERMET (version 18081), AERMOD's meteorological data preprocessor module.

The BAAQMD GOSBGF 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 Plume Rise Model Enhancements to the USEPA Building Profile Input Program (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 (≤20 meter spacing), from the fence line to 0.5 kilometers (km) from the facility (20-meter spacing), from 0.5 km to 1.0 km from the facility (50-meter spacing), from 1.0 km to 2.0 km from the facility (100-meter spacing), from 2.0 km to 5.0 km from the facility (200-meter spacing), and from 5.0 km to 10.0 km from the facility (500-meter spacing). 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. Except for the fenceline receptors, all receptors were located as appropriate

for the receptor grid spacing (e.g., 20-meter spaced receptor UTM coordinates end in 20.00, 40.00, 60.00, 80.00, or 00.00 meters; 50-meter spaced receptor UTM coordinates end in 50.00 or 00.00 meters; 100-meter spaced receptors end in 00.00 meters; etc.). Additional refined 20-meter spaced receptor grids could be used if maximum impacts occurred in receptor grids spaced 50-meters apart or greater. However, all maximum impacts occurred on fenceline receptors or on the 20-meter receptor grid directly next to the fenceline.

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. Figure AQ3-2 in Appendix AQ3 presents the receptor grids used in the modeling analyses.

Source Data – Modeling Inputs

Emissions and stack parameters for the emergency generator 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 GOSBGF sources and the building outlines considered in the downwash analysis. Stack base elevations were given a common base elevation based on the average of expected final site elevations.

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 load conditions from 1 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. All the engines were modeled in a screening analysis for loads at 1%, 10%, 25%, 50%, 75% and 100%, with a source group for each individual engine (only one engine will be tested at any one time during a single hour). 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 larger QSK95 engine was assumed to operate up to 6 hours a day (7AM to 5PM) to conservatively represent up to 6 different engines operating one hour each in any one day as appropriate for 3-hour, 8-hour, and 24-hour averaging times (i.e., 3 engines for 3-hour averaging times, 6 engines for 8-hour averaging times by ratioing 8-hour emissions by (6/8), and 6 engines for 24-hour averaging times by ratioing 24-hour emissions by (6/10) for the 10 hours modeled for each day). Similarly, one smaller QSX15 engine was modeled for up to 3-hours per day to represent three different QSX15 engines running 1 hour/day each (8-hour and 24-hour emissions were ratioed by (3/8) and (3/10), respectively). Thus, the worst-case stack condition and the worst-case engine location could be determined from the screening analysis. All 39 engines were assumed to be tested for annual averages for up to 20 hours each year, with emissions proportioned accordingly. Screening of annual emissions for 1%, 10%, and 100% operating loads

show that 100% load is the worst-case annual and 5-year operating condition for both QSK95 and QSX15 engines.

The short-term screening assessment identified the QSK95 engine impacts for 100% load case as always producing the largest modeled concentrations for all pollutants and averaging times, albeit for different engines: 1-hour maximum screening impacts occurred for emergency generator SV1812, 3-hour maximum screening impacts occurred for emergency generator SV1207, 8-hour maximum impacts occurred for emergency generator SV1906, and 24-hour maximum impacts occurred for emergency generator SV1806 (emergency generators are numbered for each of the three data center buildings SV12, SV18, and SV19 from the large engine stack diagonally opposite and across the building from the small engine, then 01-06 on that side of the building, followed by 07-12 in the same direction on the other side of the building, and ending with 13 for the small engine stack). The screening results were used directly in the refined analyses for the CAAQS, and for the NAAQS assessed with maximum impacts (1-hour and 8-hour CO and 3-hour and 24-hour SO_2) and are included in Table 4-16.

Refined modeling analyses were performed for comparisons to 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}). Like the screening assessment, all emergency generators were modeled individually to determine the worst-case stack. Since the engines would each be tested far less than 100 hours/year (limited to 20 hours per year through the ATCM), the annual average emission rate was modeled in 1 hour NO_2 and SO_2 NAAQS modeling analyses per EPA guidance due to the statistical nature of these standards (the engines were modeled at the maximum 1-hour NO_2 and SO_2 emission rate for the CAAQS). Refined modeling for both the NAAQS and CAAQS was also required for annual averages since there are two different types of engines that will both be operated during the year, each with its own stack parameters and emission rates, and PM_{10} and $PM_{2.5}$ because there are chiller cells to be included in the modeling analyses.

For the 1-hour NO_2 modeling assessments, the EPA Plume 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 and size of diesel engine in EPA's ISR database. Concurrent hourly ozone data from the 158 East Jackson Street monitoring site 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 three (3) consecutive years of monitoring data (December 2014-November 2017), consistent with CAPCOA and USEPA guidance in that it is concurrent with the meteorological data base used in AERMOD. The maximum hourly background values for the season/hour were added to the modeled NO_2 concentrations for the 1-hour CAAQS assessment. The three-year average of the second-highest hourly background values for the season/hour were added to the modeled NO_2 concentrations for the NAAQS assessment. The ozone data are input as a separate file (in PPB) while the background NO_2 data (in $\mu g/m^3$) are included in the AERMOD control file. Assessment with the CAAQS is based on the maximum modeled 1-hour NO_2 concentration (after adding the appropriate background concentration). NO_2 NAAQS compliance is based on the five-year average of the modeled 98th percentile daily maximum annual 1-hour impacts (after adding the appropriate background concentration).

For the annual NO_2 modeling assessments, the EPA Ambient Ratio Method 2 (ARM2) was used with the default minimum/maximum ambient ratios of 0.5/0.9 (ratio value depends on the modeled NO_x concentration).

The worst-case emergency generator was SV1806 for the 1-hour NO_2 CAAQS (maximum impact with background), SV1908 for the 1-hour NO_2 NAAQS (maximum 5-year average of the annual 98th percentile daily maximum 1-hour concentrations) and SV1207 for 1-hour SO_2 NAAQS (maximum 5-year average of the annual 99th percentile concentrations). When modeled with the cooling towers, the worst-case emergency generator was SV1906 for the maximum 24-hour $PM_{10}/PM_{2.5}$. CAAQS, SV1905 for the 24-hour PM_{10} NAAQS (maximum sixth-high over the five years modeled), and SV1906 for the 24-hour $PM_{2.5}$ NAAQS (maximum 5-year average of the annual 98th percentile concentrations). The emergency generator numbering is described above.

The screening (if appropriate) and refined modeled concentrations are presented in Table 4.5-16. The locations of the maximum impacts are provided in Figure AQ3-3 in Appendix AQ3.

Table 4.5-16: Modeled Concentrations and Ambient Air Quality Standards						
Pollutant	**Averaging Period**	**Maximum Concentration ($\mu g/m^3$)**	**Background ($\mu g/m^3$)**	**Total ($\mu g/m^3$)**	**Ambient Air Quality Standards ($\mu g/m^3$)**	
					CAAQS	**NAAQS**
3-/8-/24-Hour Maxima shown for one larger QSK95 engine operating up to 6 hours/day (conservatively represents six engines operating 1 hour/day each) or one smaller QSX15 engine operating up to 3 hours/day (conservative represents three engines operating 1 hour/day each) during the ten hours from 7AM to 5PM.						
NO_2*	1-hour maximum (CAAQS)	N/A	N/A	276.1	339	-
	5-yr average of 1-hour yearly 98th% (NAAQS)**	N/A	N/A	79.4	-	188
	Annual maximum	3.60	24.5	28.1	57	100
CO	1-hour maximum	475	2,863	3,338	23,000	40,000
	8-hour maximum	172	2,405	2,577	10,000	10,000
SO_2	1-hour maximum (CAAQS)	0.84	18.1	18.9	655	-
	5-yr average of 1-hour yearly 99th% (NAAQS)**	0.003	7.1	7.1	-	196
	3-hour maximum	0.63	18.1	18.7	-	1,300
	24-hour maximum	0.09	2.9	3.0	105	365
	Annual maximum	0.004	0.5	0.5	-	80
PM_{10}	24-hour maximum (CAAQS)	3.71	122	125.7	50	-
	24-hour 6th highest over 5 years (NAAQS)	3.56	98	101.6	-	150
	Annual maximum (CAAQS)	0.62	23.1	23.7	20	-
$PM_{2.5}$	5-yr average of 24-hour yearly 98th% (NAAQS)	3.23	42	45.2	-	35

Table 4.5-16: 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**
	Annual maximum (CAAQS)	0.62	12.8	13.4	12	-
	5-yr average of annual concentrations (NAAQS)	0.61	10.2	10.8	-	12.0

* 1-hour NO_2 impacts are evaluated using the USEPA Plume Volume Molar Ratio Method (PVMRM) and an in-stack NO_2/NOx ratio of 0.10 (10%), with appropriate maximum seasonal hourly NO_2 background values already added by AERMOD. Annual NO_2 impacts are evaluated with the USEPA Ambient Ratio Method #2 (ARM2) with USEPA-default minimum/maximum NO_2/NOx ambient ratios of 0.5/0.9.

** Impacts for the 1-hour statistical-based NO_2 and SO_2 NAAQS are based on the annual average emissions per USEPA guidance documents for intermittent sources like emergency generators. Impacts for the 1-hour NO_2 and SO_2 CAAQS are based on the 1-hour emission rate since these CAAQS are "values that are not to be exceeded".

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

Based on the modeling results in Table 4.5-16, modeled impacts plus background are less than the CAAQS/NAAQS for NO_2, CO and SO_2 for all averaging times, and the PM_{10} 24-hour NAAQS and $PM_{2.5}$ annual NAAQS. However, combined modeled impacts and background concentrations are greater than the 24-hour and annual PM_{10} CAAQS, 24-hour $PM_{2.5}$ NAAQS, and annual $PM_{2.5}$ CAAQS, but only because the background concentrations already exceed the applicable CAAQS/NAAQS. Modeled projects impacts for $PM_{2.5}$ are less than the BAAQMD CEQA significant levels in residential areas.

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 GOSBGF 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 4.5-17. There are several sensitive receptors within 1000 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 4.5-17: Sensitive Receptors Nearfield of the GOSBGF Site

Receptor Type	UTM Coordinates	Distance from Site (feet)	Elevation (AMSL feet)
Nearest Residence	607696, 4121286	710	56
Nearest Hospital	606410, 4122146	5,514	NA
Nearest School	607561, 4121110	1,935	60
Nearest Daycare	606647, 4122198	4,873	NA
Source: Google Earth image date: 10/7/19			

The nearest residences are located to the south and southwest of the site at distances starting from approximately 710 feet from the southwest most stack locations.

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 September 2019.

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. As there are sensitive and residential receptors within a 1,000-foot radius around the project site, community risk impacts from construction activities were assessed at the actual sensitive/residential receptor locations. The results of the analysis were compared with the BAAQMD significance levels for construction risk, which also includes the comparison to the annual $PM_{2.5}$ significance criteria of 0.3 $\mu g/m^3$.

Construction Modeling Techniques and Inputs

Ambient air quality impacts from emissions of $PM_{2.5}$ and DPM during the construction of the project were estimated using an air quality dispersion modeling analysis. The modeling analysis considers the construction site location, the surrounding topography, and the sources of emissions during construction, including vehicle and equipment exhaust emissions and fugitive dust.

The USEPA-approved model AERMOD (Version 19191) was used to estimate ambient impacts from construction activities, consistent with the facility operational impact analyses and the version of AERMET (version 18081) used by BAAQMD to process the meteorological data from the San José and Oakland Airports. A detailed discussion of the AERMOD dispersion model and the associated processing programs AERMET and AERMAP is included with the discussion of the modeling analyses of project operating impacts.

The emission sources for the construction site were grouped into two categories: exhaust emissions and dust emissions. Combustion equipment exhaust emissions were modeled as thirty-nine (39) 3.048-meter-high point sources (exhaust parameters of 750 Kelvins, 64.681 m/s exit velocity, and 0.1524-meter stack diameter) placed at regular 40-meter intervals around the construction area. Construction fugitive dust emissions were modeled as area sources covering the construction area with an effective plume height of 0.5 meters. Combustion and fugitive emissions were assumed to occur for 10 hours/day (7 AM to 5 PM) consistent with the expected period of onsite construction activities generating both exhaust emissions and fugitive dust. The construction impacts modeling analysis used the same receptor locations and meteorological data as used for the project operating impact analysis. A detailed discussion of the receptor locations and meteorological data is included with the discussion of the modeling analyses of project operating impacts.

Modeling Results

Maximum modeled DPM and $PM_{2.5}$ were assessed and compared with the BAAQMD construction impact significance levels. DPM impacts to health risk was assessed by using the BAAQMD health risk impact procedures. The annual $PM_{2.5}$ modeled concentration was directly compared to the BAAQMD significance level.

This analysis showed that cancer risk from construction activities at the maximum impacted sensitive/residential receptor (#6444) is 1.283×10^{-6} (0.000001283), and the chronic HI is 0.0071. These values are well below the BAAQMD significance levels of 10 in a million risk and 1.0 HI. Additionally, the maximum modeled sensitive/residential $PM_{2.5}$ concentration was 0.02 $\mu g/m^3$

(receptor #6444) and is below the annual BAAQMD significance criteria of 0.3 $\mu g/m^3$. Thus, the construction results will result in a less than significant impact to the surrounding community.

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. 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 following data sources: 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 for this engine family, and the Cummins supplied emissions factors for the 10% 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.

Health risks were evaluated for a hypothetical PMI, MEIR, MEIW, and MEIS for the following scenarios:

Scenario 1 assumed that all receptors on the modeling grid represented residential or sensitive receptors. If the cancer risk and hazard indices at the PMI are below the significance thresholds as established by the BAAQMD, then the MEIR and MEIS risks would be less than significant for all other receptors on the grid.

Scenario 2 assumed that all receptors on the modeling grid represented worker receptors. If the cancer risk and hazard indices at the PMI were below the significance thresholds as established by the BAAQMD, then the MEIW risks would be less than significant for all other receptors on the grid.

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 4.5-18.

Table 4.5-18: 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, 9/2019.

Table 4.5-19 delineates the maximum hourly and annual emissions of the identified air toxic pollutants (DPM) from the emergency backup engines.

Table 4.5-19: Maxiumum GOSBGF 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	1.123	-	22.46
QSX15	DPM	0.129	-	2.58
Note: DPM is the accepted surrogate compound for whole diesel exhaust per CARB and EPA. Based on the EPA D2 Cycle weighted emissions factors at 100% load, for 20 hrs/yr.				

Characterization of Risks from Toxic Air Pollutants

The excess lifetime cancer risk associated with concentrations in air estimated for the GOSBGF PMI location is estimated to be $2.48E^{-6}$ or 2.48 per million. Excess lifetime cancer risks less than 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 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 4.5-20. Risks associated with pollutants potentially emitted from the facility are presented in Table 4.5-21 and Table 4.5-22. 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 these locations, it is unlikely that there would be significant impacts in any other location in the vicinity of the facility for both the residential and worker exposure scenarios.

Table 4.5-20: 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 4.5-21: GOSBGF Residential/Sensitive Health Risk Assessment Summary						
Location	**Receptor #**	**UTM**	**Cancer Risk**	**Chronic HI**	**Acute HI**	**Cancer Burden**
PMI	30	608154.6 4121398	2.18 ppm	0.00736	NA	NA
MEIR	6493	608800 4121050	2.48 ppm	0.00084	NA	NA
MEIS	12164	609037 4120914	6.10 ppm	0.00206	NA	NA
Notes: See acronym definitions above.						

Table 4.5-22: GOSBGF Worker Health Risk Assessment Summary						
Location	**Receptor #**	**UTM**	**Cancer Risk**	**Chronic HI**	**Acute HI**	**Cancer Burden**
PMI*	30	608154.6 4121398	9.56E-6	0.00736	NA	NA
MEIW	3572	608220 4121360	2.1E-6	0.00473	NA	NA
Notes: See acronym definitions above. *The PMI listed above is NOT a worker location.						

Cancer risks potentially associated with facility emissions 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 1×10^{-6} 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 4.5-21. 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 locations of the MEIR or MEIW. If there is no significant impact associated with concentrations in air at these locations, it is unlikely that there would be significant impacts in any other location in the vicinity of the facility for both residential and worker exposure scenarios.

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 1×10^{-6} is typically used as a screening threshold of significance for potential exposure to carcinogenic substances in air. The excess cancer risk level of 1×10^{-6}, 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 1 x 10^{-6} (one-in-one million), which are called de minimis risks. De minimis risks are historically considered risks of no regulatory concern. Chemical exposures with risks above 4 x 10^{-3} (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 GOSBGF PMI does not exceed the 10 x 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 GOSBGF emissions should consider that the conservatism in the assumptions and methods used in risk estimation considerably over-state the risks from GOSBGF 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 GOSBGF.

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 GOSBGF indicates that the maximum cancer risks will be well below 10 per million (versus a significance threshold of 10 per million with T-BACT) at either the MEIR or MEIW from GOSBGF emissions. This risk level is not considered significant. Non-cancer chronic effects for all scenarios are well below the chronic hazard index significance value of 1.0.

Results from an air toxics risk assessment based on emissions modeling indicate that there will be no significant incremental public health risks from the construction and operation of the GOSBGF. 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

Table 4.5-23 provides the annual criteria pollutant emission estimates for project operation using the emissions source assumptions noted above. Table 4.5-23 shows that with NO_x emissions from the testing of the standby generators fully offset through mitigation measures that will be required as part of the permitting process with the BAAQMD (Regulation 2, Rule 2 NSR), the project would not exceed any of the BAAQMD operation emissions significance thresholds. The BAAQMD significance thresholds for daily emissions are daily average values that multiply to equal the annual

thresholds, so a separate comparison of the project's average daily emissions versus the BAAQMD average daily significance thresholds is unnecessary.

Table 4.5-23: Annual Criteria Pollutant Emissions from Project Operation						
Cumulative Impacts						
Source Type	**Annual Emissions (tpy)**					
	VOC	**CO**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Miscellaneous Operational Emissions associated with the Facility (mobile, energy, area, waste, and water)	3.65	0.63	0.66	0.004	0.048	0.048
Emissions from Diesel Storage Tanks	< 0.1	--	--	--	--	--
Building Cooling Towers (3 total)	--	--	--	--	1.7	1.7
Standby Generators (Testing Only)[1]	0.86	1.86	16.3	0.02	0.41	0.41
Total Operational Emissions	4.52	2.49	16.96	0.02	2.16	2.16
Proposed Offsets (Reg 2 Rule 2, 302) 1:1.15	--	--	18.8	--	--	--
Total Mitigated Emissions	--	--	18.8	--	--	--
BAAQMD Annual Significance Thresholds	10	--	10	--	15	10
Exceed BAAQMD Threshold? (Y/N)	No	N/A	No	N/A	No	No

[1] Based on Scenario 4 for both engine types (20 hr/yr/engine), D2 EPA Cycle EF's.

Offset ratio is 1:15 with NOx > 35 tpy (based on the 120 hr/yr BAAQMD Ops policy)

Source: ADI 2019

Table 4.5-23 also shows that the project would not be expected to result in a cumulatively considerable net increase of nonattainment criteria pollutants during the operational lifetime of the project, including routine testing and maintenance of the standby engine generators. Therefore, project operations would not result in a cumulatively considerable net increase of any criteria pollutant, and this impact would be less than significant.

4.6 BIOLOGICAL RESOURCES

The following discussion is based in part on a Biological Resources Report and Tree Survey Report prepared by H.T. Harvey & Associates in November 2015, a Mitigation Compliance Memo completed by DJP&A in October 2018, and a Tree Protection Plan completed by HortScience, Inc. in September 2018. Copies of these reports are respectively provided in Appendices B, C, and D.

4.6.1 Environmental Setting

4.6.1.1 *Regulatory Framework*

Federal and State

Endangered Species Act

Individual plant and animal species listed as rare, threatened, or endangered under state and federal Endangered Species Acts are considered special-status species. Federal and state endangered species legislation has provided the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Permits may be required from both the USFWS and CDFW if activities associated with a proposed project would result in the take of a species listed as threatened or endangered. To "take" a listed species, as defined by the State of California, is "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" these species. Take is more broadly defined by the federal Endangered Species Act to include harm of a listed species.

In addition to species listed under state and federal Endangered Species Acts, Sections 15380(b) and (c) of the CEQA Guidelines provide that all potential rare or sensitive species, or habitats capable of supporting rare species, must be considered as part of the environmental review process. These may include plant species listed by the California Native Plant Society and CDFW-listed Species of Special Concern.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits killing, capture, possession, or trade of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. Hunting and poaching are also prohibited. The taking and killing of birds resulting from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not to take birds.[16] Nesting birds are considered special-status species and are protected by the USFWS. The CDFW also protects migratory and nesting birds under California Fish and Game Code Sections 3503, 3503.5, and 3800. The CDFW defines taking as causing abandonment and/or loss of reproductive efforts through disturbance.

[16] United States Department of the Interior. "Memorandum M-37050. The Migratory Bird Treaty Act Does Not Prohibit Incidental Take." Accessed December 11, 2019. https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf.

Sensitive Habitat Regulations

Wetland and riparian habitats are considered sensitive habitats under CEQA. They are also afforded protection under applicable federal, state, and local regulations, and are generally subject to regulation by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), CDFW, and/or the USFWS under provisions of the federal Clean Water Act (e.g., Sections 303, 304, 404) and State of California Porter-Cologne Water Quality Control Act.

Fish and Game Code Section 1602

Streambeds and banks, as well as associated riparian habitat, are regulated by the CDFW per Section 1602 of the Fish and Game Code. Work within the bed or banks of a stream or the adjacent riparian habitat requires a Streambed Alteration Agreement from the CDFW.

Regional and Local

Santa Clara Valley Habitat Plan/Natural Community Conservation Plan

The Santa Clara Valley Habitat Plan/Natural Community Conservation Plan (Habitat Plan) covers approximately 520,000 acres, or approximately 62 percent of Santa Clara County. It was developed and adopted through a partnership between Santa Clara County, the Cities of San José, Morgan Hill, and Gilroy, Santa Clara Valley Water District (Valley Water), Santa Clara Valley Transportation Authority (VTA), USFWS, and CDFW. The Habitat Plan is intended to promote the recovery of endangered species and enhance ecological diversity and function, while accommodating planned growth in southern Santa Clara County. The Santa Clara Valley Habitat Agency is responsible for implementing the plan.

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to biological resources and are applicable to the proposed project.

Envision San José 2040 Relevant Biological Resource Policies

Policy	Description
ER-4.4	Require that development projects incorporate mitigation measures to avoid and minimize impacts to individuals of special-status species.
ER-5.1	Avoid implementing activities that result in the loss of active native birds' nests, including both direct loss and indirect loss through abandonment, of native birds. Avoidance of activities that could result in impacts to nests during the breeding season or maintenance of buffers between such activities and active nests would avoid such impacts.
ER-5.2	Require that development projects incorporate measures to avoid impacts to nesting migratory birds.
ER-6.5	Prohibit use of invasive species, citywide, in required landscaping as part of the discretionary review of proposed development.

4.6.1.2 *Existing Conditions*

Setting

While the project area is urban and developed, consisting of commercial development, residential neighborhoods, and roadways, the project site is currently undeveloped and consists primarily of ruderal grassland supporting non-native grasses and plants. A large valley oak located near the northwest corner of Via del Oro and Great Oaks Boulevard has been designated by the City of San José as a Heritage Tree (HT-02-006).

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

In general, wildlife use of ruderal grassland habitat is limited by the high levels of human disturbance that occurs on-site, and the urban environment in the surrounding area.

No special status plants or animal species were observed or determined to be present on-site. The project site does not support any sensitive habitat.

The project site is within the Santa Clara Valley Habitat Plan and is designated as Agricultural and Valley Floor Land.

4.6.2 **Impact Discussion**

	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?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The primary modifications to the project evaluated in the 2017 MND that may affect Biological Resources is the removal of 21 on-site trees.

The original 2017 MND recorded a total of 22 trees on the project site, including a valley oak designated as a Heritage Tree. Twelve additional trees had a diameter at breast height (DBH) greater than or equal to 18 inches, meeting the size criteria of the ordinance-sized trees under the City's Municipal Code. More detailed information can be found in the Biological Resources Report and Tree Survey Report attached as Appendix B. The 2017 MND included standard project conditions for tree replacement requirements, as well as mitigation measures to address potential impacts to nesting birds and to the Heritage Tree.

Following the approval of the 2017 MND, the City of San José issued a permit for the original project and 13 trees were removed from the project site. The Heritage Tree, located at the corner of Via Del Oro and Great Oaks Boulevard, and one other tree is currently the only remaining tree on-site. As part of the approval process for the grading permit, a Mitigation and Monitoring Compliance Memo was prepared for the City (attached as Appendix C) that documented compliance with the mitigation measures listed in the 2017 MND.

The Mitigation and Monitoring Compliance memo required the preparation of a Tree Preservation Plan (attached as Appendix D) for the Heritage Tree that listed tree preservation guidelines to be implemented for all phases of project construction. Furthermore, a Habitat Plan application was completed and submitted to the City, and all fees were paid prior to issuance of grading permits.

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)**

As discussed previously, the 2017 MND did not identify any sensitive species or habitats on the project site. The 2017 MND included mitigation measures to avoid potential impacts to nesting birds. Following approval of the 2017 MND, the City of San José approved the Special Use Permit and issued a grading permit, and 15 trees were removed in accordance with the CDFW and provisions of the MBTA. Therefore, no further mitigation beyond implementation of the existing approved mitigation, which is proposed by SV1 as part of its design, is required for the proposed project, and there would be a less than significant impact. **(Less than Significant Impact)**

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)**

As described in the 2017 MND, there are no riparian habitats or wetlands located on the project site or in the surrounding area. The project, therefore, would have a less than significant impact on riparian habitat or other sensitive communities. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

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. This conclusion is consistent with the findings of the 2017 MND. **(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. **(Less than Significant 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, impede the use of native wildlife nursery sites. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant 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 with Mitigation Incorporated into Project Design)**

The project is subject to comply with City policies and Municipal Code regulations regarding tree removal. Table 4.6-1 below shows the tree replacement ratios required by the City.

Table 4.6-1: Tree Replacement Ratios

Circumference of Tree to be Removed	Type of Tree to be Removed			Minimum Size of Each Replacement Tree
	Native	Non-Native	Orchard	
56 inches or more	5:1	4:1	3:1	24-inch box
38 – 56 inches	3:1	2:1	none	24-inch box
Less than 38 inches	1:1	1:1	none	15-gal. container

x:x = tree replacement to tree loss ratio

Note: Trees greater than or equal to 56-inch trunk circumference shall not be removed unless a Tree Removal Permit, or equivalent, has been approved for the removal of such trees.

Following approval of the 2017 Special Use Permit, 13 trees were removed from the project site; therefore, no additional tree removal is proposed beyond what has already been removed.

The current project proposes to plant street trees along San Ignacio Avenue and Via Del Oro. The project would preserve the Heritage Tree, a large valley oak at the corner of Via Del Oro and Great Oaks Boulevard. Temporary construction impacts on the Heritage tree to be retained, if unmitigated, would constitute a significant impact.

The following mitigation measures would be incorporated into the project design to reduce impacts to a less than significant level.

Mitigation Incorporated into the Project Design:

PD BIO-1: In accordance with current City policies and Municipal regulations, trees removed will be replaced at the ratios identified in Table 4.6-1.

- In the event replacement/mitigation trees cannot be accommodated on the site, tree removal shall be mitigated through a donation of $300 per mitigation tree to Our City Forest for in-lieu off-site tree planting in the community. The species of trees to be planted shall be determined in consultation with the City Arborist and the Department of Planning, Building and Code Enforcement. Trees removed shall be replaced at these ratios, or the applicant shall pay an in-lieu fee to Our City Forest to compensate for the loss of trees on-site.

PD BIO-2: In accordance with guidelines established by the International Society for Arboriculture, the following tree protection measures will be implemented to reduce impacts to the Heritage Tree:

- Establish an area surrounding the Heritage Tree to be protected during construction as defined by a circle concentric with each tree with a radius 1-1/2 times the diameter of the tree canopy drip line. This "tree protection zone" is established to protect the tree trunk, canopy and root system from damage during construction activities and to ensure the long-term survival of the protected trees. The tree protection zone shall: (1) ensure that no structures or buildings, that might restrict sunlight relative to the existing conditions, will be constructed in close proximity to the trees; and (2) that no improvements are constructed on the ground around the tree within the tree protection zone, thus ensuring that there is sufficient undisturbed native soil surrounding the tree to provide adequate moisture, soil nutrients and oxygen for healthy root growth.
- Protect tree root systems from damage caused by (a) runoff or spillage of noxious materials while mixing, placing, or storing construction materials and (b) ponding, eroding, or excessive wetting caused by incident rainfall through use of the following measures during excavation and grading:
    - Excavation: Do not trench inside tree protection zones. Hand excavate under or around tree roots to a depth of three feet. Do not cut main lateral tree roots or taproots. Protect exposed roots from drying out before placing permanent backfill.
    - Grading: Maintain existing grades within tree protection zones. Where existing grade is two inches or less below elevation of finish grade, backfill with topsoil or native soil from the project site. Place fill soil in a single un-compacted layer and hand grade to required finish elevation.
    - Apply six-inch average thickness of wood bark mulch inside tree protection zones. Keep mulch six inches from tree trunks.
- Provide 48-inch tall orange plastic construction fencing fastened to steel T-posts, minimum six feet in length, using heavyweight plastic ratchet ties. Install fence along edges of tree protection zones before materials or equipment are brought on site and construction operations begin. Maintain fence in place until construction operations are completed and equipment has been removed from site.
- Provide temporary irrigation to all trees in protection zones using a temporary on-grade drip or bubbler irrigation system sufficient to wet the soil within tree protection zones to a depth of 30 inches per bi-weekly irrigation event.

Heritage Tree Design Requirements

- Establish the horizontal and vertical elevation of the Heritage Tree. Include the trunk location and tag number on all plans.
- Design finish grades so that no water accumulates around the base of the trunk of the Heritage Tree.

- Allow the Consulting Arborist to review all future project submittals including grading, utility, drainage, irrigation, and landscape plans.
- Maintain the tree protection zone around the Heritage Tree as depicted on the Grading and Drainage Plan prepared by Ruth and Going. The tree protection zone shall be the limit of work.
- Route underground services including utilities, sub-drains, water or sewer around the tree protection zone. Where encroachment cannot be avoided, special construction techniques such as hand digging or tunneling under roots shall be employed where necessary to minimize root injury.
- Use only herbicides safe for use around trees and labeled for that use, even below pavement.
- Design the landscape around the Heritage Tree to be compatible with the cultural requirements of native oak trees.
- Any irrigation system must be designed so that no trenching will occur within the dripline of the Heritage Tree.

Pre-construction and Demolition Treatments

- The demolition contractor shall meet with the Consulting Arborist before beginning work to discuss work procedures and tree protection.
- Install protection at the tree protection zone prior to demolition, grubbing, or grading.
- No entry is permitted into a tree protection zone without permission of the project superintendent.
- The Heritage Tree should be pruned to reduce the length and weight of long, horizontal branches. Remove stubs only when there is well-developed woundwood present at the attachment. Do not remove the large stub in the center of the crown. All pruning shall be completed by an ISA Certified Arborist or Tree Worker and adhere to the latest editions of the American National Standards for tree work (Z133 and A300) and International Society of Arboriculture Best Management Practices, Pruning.
- The Heritage Tree should also be evaluated for installation of new cables to support heavy horizontal limbs.

Tree Protection during Construction

- Any grading, construction, demolition or other work that occurs within the tree protection zone should be monitored by the Consulting Arborist.
- If injury occurs to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
- Fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the project superintendent.
- Construction trailers, traffic and storage areas must remain outside fenced areas at all times.
- No materials, equipment, soil, waste, or wash-out water may be deposited, stored, or parked within the tree protection zone (fenced area).
- Any tree pruning needed for clearance during construction must be performed by a qualified arborist and not by construction personnel.

- Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw.

With implementation of the mitigation measures described above, the project would reduce impacts to a less than significant level. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact with Mitigation Incorporated into Project Design)**

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. **(Less than Significant Impact)**

The project site is located within the Habitat Plan study area. As described in Section 4.6.2 Project Changes Relevant to GOSBGF, a Habitat Plan application was submitted, and land cover and nitrogen deposition fees were paid in 2018 prior to issuance of a grading permit. Therefore, the project would have a less than significant impact. **(Less than Significant Impact)**

4.7 CULTURAL AND TRIBAL CULTURAL RESOURCES

The following discussion is based in part on Cultural Resources Assessment completed by Albion Environmental, Inc. in October 2018. A copy of the report will be submitted separately under a Request for Confidential Designation.

4.7.1 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.

4.7.1.1 *Regulatory Framework*

Federal and 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.

National Historic Preservation Act

Federal protection is legislated by the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resource Protection Act of 1979. These laws maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA and related regulations (36 Code of Federal Regulations [CFR] Part 800) constitute the primary federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed or eligible for listing in the NRHP. Impacts to properties listed in the NRHP must be evaluated under CEQA.

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is administered by the State Office of Historic Preservation and encourages protection of resources of architectural, historical,

archeological, and cultural significance. The CRHR identifies historic resources for state and local planning purposes and affords protections under CEQA. Under Public Resources Code Section 5024.1(c), a resource may be eligible for listing in the CRHR if it meets any of the NRHP criteria.[17]

Historical resources eligible for listing in the CRHR must meet the significance criteria described previously and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if it maintains the potential to yield significant scientific or historical information or specific data.

The concept of integrity is essential to identifying the important physical characteristics of historical resources and, therefore, in evaluating adverse changes to them. Integrity is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance." The processes of determining integrity are similar for both the CRHR and NRHP and use the same seven variables or aspects to define integrity that are used to evaluate a resource's eligibility for listing. These seven characteristics include 1) location, 2) design, 3) setting, 4) materials, 5) workmanship, 6) feeling, and 7) association.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. The act requires that upon discovery of human remains, construction or excavation activity must cease and the county coroner be notified.

Public Resources Code Sections 5097 and 5097.98

Section 15064.5 of the CEQA Guidelines specifies procedures to be used in the event of an unexpected discovery of Native American human remains on non-federal land. These procedures are outlined in Public Resources Code Sections 5097 and 5097.98. These codes protect such remains from disturbance, vandalism, and inadvertent destruction, establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project, and establish the Native American Heritage Commission (NAHC) as the authority to resolve disputes regarding disposition of such remains.

Pursuant to Public Resources Code Section 5097.98, in the event of human remains discovery, no further disturbance is allowed until the county coroner has made the necessary findings regarding the origin and disposition of the remains. If the remains are of a Native American, the county coroner must notify the NAHC. The NAHC then notifies those persons most likely to be related to the Native American remains. The code section also stipulates the procedures that the descendants may follow for treating or disposing of the remains and associated grave goods.

[17] California Office of Historic Preservation. "CEQA Guidelines Section 15064.5(a)(3) and California Office of Historic Preservation Technical Assistance Series #6." March 14, 2006.

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to cultural resources and are applicable to the proposed project.

Envision San José 2040 Relevant Cultural and Tribal Cultural Resource Policies

Policy	Description
ER-10.2	Recognizing that Native American human remains may be encountered at unexpected locations, impose a requirement on all development permits and tentative subdivision maps that upon discovery during construction, development activity will cease until professional archaeological examination confirms whether the burial is human. If the remains are determined to be Native American, applicable state laws shall be enforced.
ER-10.3	Ensure that City, State, and Federal historic preservation laws, regulations, and codes are enforced, including laws related to archaeological and paleontological resources, to ensure the adequate protection of historic and pre-historic resources.

4.7.1.2 *Existing Conditions*

Prehistoric and Historic Resources

Prehistoric resources are resources that have significance in prehistory, which is defined as events of the past occurring prior to advent of written records. Historic resources are generally 50 years or older in age and include, but are not limited to, buildings, districts, structures, sites, objects, and areas. Archaeological resources are resources associated with human activity in the past and encompass both prehistoric and historic resources. According to the General Plan FEIR, the project site is located in an archaeologically sensitive area. Based upon a review of the City's archaeological sensitivity maps, there are no recorded historic or prehistoric archaeologic sites in the project area.

4.7.2 Impact Discussion

	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?	☐	☒	☐	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
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 GOBGF and the GODC, 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 "GOBGF" or the "GODC".

The 2017 MND was adopted prior to recent updates to the CEQA guidelines which added "Tribal Cultural Resources" as a distinct impact section with checklist questions four and five shown above. As a result, the 2017 MND did not include a robust analysis of impacts to tribal cultural resources. While questions one through three refer to the 2017 MND's cultural resources analysis, the analysis under questions four and five represents a standalone analysis of the project's tribal cultural impacts and does not include a comparison of the project's impacts to the conclusions of the 2017 MND.

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)**

As described in the 2017 MND, there are no existing historic resources on or adjacent to the project site. Therefore, implementation of the proposed project would not impact aboveground historic resources. This conclusion is consistent with the findings of the 2017 MND. **(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)**

As previously discussed, the proposed project is located in an area that is archaeologically sensitive. While no archaeological resources have been recorded on the project site and no resources were identified during a subsurface testing on the site, there is a low potential for archaeological resources to be discovered during construction activities. Should any archaeological resource, or human remains be found during grading operations, their disturbance would be a significant impact. As compared to the 2017 project, the proposed project does not call for additional soil disturbance since the building footprints are similar.

The 2017 MND mitigation measures have been supplemented with the Commission's standard Cultural and Tribal Cultural mitigation. The project shall implement the following mitigation measures as part of its design to reduce and/or avoid impacts to unknown historic and archaeological resources (if present on-site) to a less than significant level:

Mitigation Incorporated into the Project Design:

PD CUL-1: The following project-specific measures shall be implemented during construction to avoid significant impacts to unknown subsurface cultural resources:

- 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, Building, and Code Enforcement 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, Building, and Code Enforcement 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, Building, and Code Enforcement. 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. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact with Mitigation Incorporated into 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 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 following project-specific measures shall be implemented during construction to avoid significant impacts to unknown subsurface cultural resources:

- 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 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 E) 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 GOSDC and GOSBGF; an inquiry for any unrecorded Native American cultural resources or other areas of concern within or adjacent to the GOSBGF site; and a solicitation of comments, questions, or concerns with regard the GOSDC or GOSBGF. 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.[18]

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-2, discussed under Impact CUL-3. **(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)**

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

4.8 ENERGY

4.8.1 Environmental Setting

4.8.1.1 *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 January 1, 2020.[19] Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments.[20]

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, 2017, and covers five categories: planning and design, energy efficiency, water efficiency and conservation, material and resource efficiency, and indoor environmental quality.

[19] California Building Standards Commission. "Welcome to the California Building Standards Commission." Accessed December 6, 2019. http://www.bsc.ca.gov/.
[20] California Energy Commission (CEC). "2019 Building Energy Efficiency Standards." Accessed December 6, 2019. 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.[21]

4.8.1.2 *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.[22] 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 (1,416 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.[23] This energy is primarily supplied in the form of natural gas, petroleum, nuclear electric power, and hydroelectric power.

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.[24]

San José Clean Energy (SJCE) is the electricity provider for residents and businesses in the City of San José that opt in to its program. SJCE sources the electricity and the Pacific Gas and Electric Company (PG&E) delivers it to customers over their existing utility lines. SJCE customers are automatically enrolled in the GreenSource program, which provides 80 percent GHG emission-free electricity. Customers can choose to enroll in SJCE's TotalGreen program at any time to receive 100 percent GHG emission-free electricity form entirely renewable sources.

For the proposed project, Equinix intends to opt-in to the SJCE 80% renewable energy supply option through PG&E as the distribution company delivering power to the site.

Natural Gas

PG&E provides natural gas services within San José. 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.[25] In 2018, residential and commercial customers in California used 34 percent of the state's natural gas, power plants used 35 percent, the industrial

[21] California Air Resources Board. "The Advanced Clean Cars Program." Accessed December 13, 2019. https://www.arb.ca.gov/msprog/acc/acc.htm.
[22] United States Energy Information Administration. "State Profile and Energy Estimates, 2017." Accessed December 13, 2019. https://www.eia.gov/state/?sid=CA#tabs-2.
[23] Ibid.
[24] California Energy Commission. Energy Consumption Data Management System. "Electricity Consumption by County." Accessed December 13, 2019. http://ecdms.energy.ca.gov/elecbycounty.aspx.
[25] California Gas and Electric Utilities. 2019 *California Gas Report.* Accessed December 13, 2019. https://www.socalgas.com/regulatory/documents/cgr/2019_CGR_Supplement_7-1-19.pdf.

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.[26]

Fuel for Motor Vehicles

In 2017, 15 billion gallons of gasoline were sold in California.[27] 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.[28] 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 2011 through 2020. [29,30]

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to energy and are applicable to the proposed project.

Envision San José 2040 Relevant Energy Policies

Policy	Description
MS-2.2	Encourage maximized use of on-site generation of renewable energy for all new and existing buildings.
MS-2.3	Utilize solar orientation (i.e., building placement), landscaping, design, and construction techniques for new construction to minimize energy consumption.
MS-2.6	Promote roofing design and surface treatments that reduce the heat island effect of new and existing development and support reduced energy use, reduced air pollution, and a healthy urban forest. Connect businesses and residents with cool roof rebate programs through City outreach efforts.
MS-2.7	Encourage the installation of solar panels or other clean energy power generation sources over parking areas.
MS-2.8	Develop policies which promote energy reduction for energy-intensive industries. For facilities such as data centers, which have high energy demand and indirect greenhouse gas emissions, require evaluation of operational energy efficiency and

[26] California Energy Commission. "Natural Gas Consumption by County." Accessed December 13, 2019. http://ecdms.energy.ca.gov/gasbycounty.aspx.
[27] California Department of Tax and Fee Administration. "Net Taxable Gasoline Gallons." Accessed December 16, 2019. https://www.cdtfa.ca.gov/taxes-and-fees/MVF-10-Year-Report.pdf
[28] United States Environmental Protection Agency. "The 2018 EPA Automotive Trends Report: Greenhouse Gas Emissions, Fuel Economy, and Technology since 1975." March 2019.
[29] United States Department of Energy. *Energy Independence & Security Act of 2007.* Accessed December 9, 2019. http://www.afdc.energy.gov/laws/eisa.
[30] Public Law 110–140—December 19, 2007. *Energy Independence & Security Act of 2007.* Accessed December 9, 2019. http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf.

Envision San José 2040 Relevant Energy Policies

Policy	Description
	inclusion of operational design measures as part of development review consistent with benchmarks such as those in EPA's EnergyStar Program for new data centers. Also require consideration of distributed power production for these facilities to reduce energy losses from electricity transmission over long distances and energy production methods such as waste-heat reclamation or the purchase of renewable energy to reduce greenhouse gas emissions.
MS-2.9	Develop, implement, and utilize programs that help businesses and homeowners improve the energy efficiency of new and existing buildings and use of renewable energy sources, such as polar, through on-site generation or purchase of electricity from solar power programs in California.
MS-2.10	Develop policies to encourage the use of building materials extracted and/or manufactured in California, or within 500 miles of San José.
MS-2.11	Require new development to incorporate green building practices, including those required by the Green Building Ordinance. Specifically, target reduced energy use through construction techniques (e.g., design of building envelopes and systems to maximize energy performance), through architectural design (e.g., design to maximize cross ventilation and interior daylight) and through site design techniques (e.g., orienting buildings on sites to maximize the effectiveness of passive solar design).

4.8.2 Impact Discussion

	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 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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The MND for the GOSDC site evaluated 21 generators as part of the MDC. The GOSGF is an expansion of the backup generating facilities to include 15 +3 additional generators.

The modification to the project that could affect energy impacts, compared to the 2017 MND, is a decrease in electricity consumption. The 2017 MND estimated an electricity consumption of 307,673,000 kWh per year, while the 2020 project proposes a demand of 13,980,100 kWh per year. This difference is explained further below.

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

Construction

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 4.5 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 GOSDC 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 GOSDC would be built in accordance with Title 24 and CalGreen and include green building measures to reduce energy consumption. The GOSDC 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 GOSDC would be designed to achieve a minimum of LEED Silver certification. Due to the energy efficiency measures incorporated into the facility, the GOSDC would not result in a wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources.

GHG emissions generated by the operation of the GOSDC are summarized in Table 4.8-1 below.

Table 4.8-1: GOSDC GHG Emissions

Source	Annual Emissions (Metric Tons of CO_2e)
Energy Use	4,772
Mobile Sources	35
Water Use	372
Waste Generation	78
Total	**5,257**

Source: Atmospheric Dynamics CalEEMod analysis, February 2020.

Energy would be consumed by the GOSBGF during regular testing and maintenance of the 39 emergency backup generators. Each generator would be limited to a maximum of 20 hours per year of operation. Based on fuel consumption assumptions in the air quality analysis prepared for the project (refer to Appendix A), the GOSBGF would consume roughly 161,880 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.[31] The proposed consumption of CARB Diesel Fuel by the GOSBGF is 0.002 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 GOSBGF would not result in a wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. Additionally, the GOSBGF 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.

Furthermore, as mentioned previously, the 2017 MND estimated that the project would use 307,673,000 kWh per year. The 2020 proposed project would use 13,980,100 kWh per year.[32] Therefore, the proposed project would not have a significant impact on electricity usage and would use significantly less electricity than the previously proposed project. This conclusion is consistent with the findings of the 2017 MND. **(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 energy regulations described in 4.8.1.1 (including General Plan Policies) by:

- Complying with Title 24 and CalGreen
- Participating in the City's Construction and Demolition Debris Recycling Program
- Incorporating measures such as lighting control, air economization, water conservation measures, and energy conservation measures.

The project, therefore, would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

[31] Addition of the total weekly Production Capacity and total weekly Refinery Stock reported for June 14, 2019.
[32] Atmospheric Dynamics. Equinix SV12 CalEEMod Analysis. February 2020.

4.9 GEOLOGY AND SOILS

The following analysis is based in part on a Geotechnical Investigation prepared by Langan Engineering & Environmental Services, Inc. in June 2018. A copy of the report is included in Appendix F.

4.9.1 Environmental Setting

4.9.1.1 *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 CBC prescribes standards for constructing safe 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.

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 Department of Industrial Relations, 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.

Public Resources Code Section 5097.5

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. 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.

California Building Code

The California Building Code prescribes a standard for constructing safer buildings throughout the State of California. It contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, strength of the ground and distance to seismic sources. The Code is renewed on a triennial basis every three years.

Local

Envision San José 2040 General Plan

Various policies in the City's General Plan have been adopted for the purpose of avoiding or mitigating geology and soils impacts resulting from planned development within the City. The following policies are applicable to the proposed project.

Envision San José 2040 Relevant Geology and Soils Policies

Policy	Description
EC-3.1	Design all new or remodeled habitable structures in accordance with the most recent California Building Code and California Fire Code as amended locally and adopted by the City of San José, including provisions regarding lateral forces.
ES-4.9	Permit development only in those areas where potential danger to the health, safety, and welfare of persons in that area can be mitigated to an acceptable level.
EC-4.1	Design and build all new or remodeled habitat structures in accordance with the most recent California Building Code and municipal code requirements as amended and adopted by the City of San José, including provisions for expansive soil, and grading and stormwater controls.
EC-4.2	Development in areas subject to soils and geologic hazards, including unengineered fill and weak soils and landslide-prone areas, only when the severity of hazards have been evaluated and if shown to be required, appropriate mitigation measures are provided. New development proposed within areas of geologic hazards shall not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties. The City of San José Geologist will review and approve geotechnical and geological investigation reports for projects within these areas as part of the project approval process.

Envision San José 2040 Relevant Geology and Soils Policies

Policy	Description
EC-4.4	Require all new development to conform to the City of San José's Geologic Hazard Ordinance.
EC-4.5	Ensure that any development activity that requires grading does not impact adjacent properties, local creeks, and storm drainage systems by designing and building the site to drain properly and minimize erosion. An Erosion Control Plan is required for all private development projects that have a soil disturbance of one acre or more, adjacent to a creek/river, and/or are located in hillside areas. Erosion Control Plans are also required for any grading occurring between October 1 and April 30.
ES-4.7	Consistent with the San José Geologic Hazard Ordinance, prepare geotechnical and geological investigation reports for projects in areas of known concern to address the implications of irrigated landscaping to slope stability and to determine if hazards can be adequately mitigated.

City of San José Municipal Code

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

4.9.1.2 *Existing Conditions*

Regional Geology

The City of San José is located within the Santa Clara Valley, which is a broad alluvial plain that lies between the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The San Andreas Fault system, including the Monte Vista-Shannon Fault, exists within the Santa Cruz Mountains, and the Hayward and Calaveras Fault systems exist within the Diablo Range.

On-Site Geologic Conditions

Soils

The project area is composed of an Urban land-Stevens Creek soil complex.[33] The soil profile for this complex includes sandy loam which persists to two inches below the surface, silt loam which persists

[33] Langan Engineering & Environmental Services, Inc. *Updated Geotechnical Investigation SV12 Great Oaks Boulevard and Via Del Oro. Section 4: Site and Subsurface Conditions.* June 8, 2018.

from two to nine inches below the surface, silty clay which persists from nine to 27 inches below the surface, clay loam which persists from 27 to 39 inches below the surface, and sandy clay loam which persists from 39 to 70 inches below the surface.

The soils on the data center site exhibit a high potential for expansion. The site topography is flat with no erosion or landslide hazards. Expansive soils shrink and swell as a result of moisture changes, which can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations.

Seismicity

The three major fault lines in the area are the Hayward Fault, San Andreas Fault, and Calaveras Fault. The Hayward Fault (active segment) is approximately 19 miles north of the project site, the San Andreas Fault is approximately 11 miles southwest of the site, and the Calaveras Fault is approximately six miles east of the site.[34] Because of the proximity of the site to these faults, any ground shaking, ground failure, or liquefaction due to an earthquake could cause damage to the structures. While the project site is not located within a fault rupture hazard zone, strong ground shaking is expected to occur on-site during an earthquake. Due to the flat topography of the site, there is no erosion or landslide hazard.

Liquefaction

The data center site is located in a liquefaction hazard zone.[35] No significant liquefaction phenomena, however, were observed/recorded in the site vicinity during the 1989 Loma Prieta earthquake. Because the soils on the site are mostly medium-dense to dense and the site water table is relatively deep (between 50 to 70 feet)[36], the potential for liquefaction at the site is low to moderate.

Lateral Spreading

Lateral spreading is a phenomenon in which a surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. The surficial blocks are transported downslope or in the direction of a free face, such as a channel, by earthquake and gravitational forces. Lateral spreading is generally the most pervasive and damaging type of liquefaction-induced ground failure induced by earthquakes.

The project site is relatively flat, the potentially liquefiable soils are relatively deep, and there is no open face slope. Furthermore, lateral spreading was not reported to have occurred at the site during the 1906 or 1989 earthquakes. Therefore, lateral spreading is not likely to affect the site.

Paleontological Resources

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

[34] Santa Clara County. "Geologic Hazards Zones Map." Accessed December 18, 2019. Available at: https://sccplanning.maps.arcgis.com.
[35] Ibid.
[36] Langan Engineering & Environmental Services, Inc. *Updated Geotechnical Investigation SV12 Great Oaks Boulevard and Via Del Oro. Section 4: Site and Subsurface Conditions.* June 8, 2018.

dinosaur bones) to scientifically important fossils. The project site is underlain by Holocene alluvial fan material deposits, which have low potential to yield significant fossils at the surface, but may contain resources at depth.[37]

4.9.2 Impact Discussion

	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?	☐	☐	☒	☐

[37] City of San José. *Envision San José 2040 General Plan Final EIR*. November 2011.

Note to reader: Where the following analysis applies to both the GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

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 4.9.1.2, there are no known active or potentially active faults crossing the project site. The project 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 or landslide hazard zone, and the potential for liquefaction to occur on site is low to moderate.

The project site is located in a seismically active region and would be subject to strong shaking in the event of seismic activity. 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 2017 MND included the following standard City of San José condition that would be implemented to ensure impacts would remain at a less than significant level.

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.

- The project shall be constructed in conformance with the recommendations of the design-level geotechnical investigation prepared for the project, as well as at the 2017 California Building Code, or subsequent adopted codes.

With implementation of the condition above, the project would not result in a significant impact. This conclusion is consistent with the findings of the 2017 MND. **(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)**

As discussed in the 2017 MND, ground disturbance would be required during excavation, grading, and construction of the proposed data center buildings. The project would also require temporary removal of existing pavement on Via Del Oro for the installation of underground distribution feeders. After the installation of the underground feeders, the roadway would be repaved.

Construction of the proposed project would not exacerbate soil conditions (e.g. undocumented fill, exposure, and liquefaction) such that it would cause off-site impacts. Ground disturbance would, however, expose soils and increase the potential for wind or water related erosion and sedimentation at the site until construction is complete. The City's NPDES Municipal Permit, urban runoff policies, and the Municipal Code (discussed in more detail in Section 4.12 Hydrology and Water Quality) are the primary means of enforcing erosion control measures through the grading and building permit process. In accordance with General Plan policies, implementation of the regulatory programs and policies in place would reduce possible impacts of accelerated erosion during construction to a less than significant level. This conclusion is consistent with the findings of the 2017 MND. **(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, and soils on the site have a high potential for expansion. The site is not located within a landslide hazard zone. Compliance with PD GEO-1, 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. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

Impact GEO-4:	The project would not be located on expansive soil, as defined in the current California Building Code, creating substantial direct or indirect risks to life or property. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

As discussed in the 2017 MND, the primary soil concerns on the project site are expansive soils. The 2018 geotechnical investigation identified moderately expansive surficial soil on-site. Moisture fluctuations in expansive soil could cause the soil to expand or contract resulting in movement and potential damage to improvements that overlie them. Potential causes of moisture fluctuations include drying during construction, and subsequent wetting from rain, capillary rise, landscape irrigation, and type of plant selection. If untreated, expansive soils could damage future buildings and pavements on the project site.

The 2017 MND recommended implementation of the following measure to reduce potential impacts from expansive soils:

Mitigation Incorporated into the Project Design:

PD GEO-2: 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.

- Prior to issuance of any site-specific grading or building permits, a design-level geotechnical investigation shall be prepared and submitted to the City of San José's Public Works Department for review and approval. The project shall implement the recommendations in the investigation to minimize impacts from expansive soils and undocumented fill. Options to address these conditions may range from the use of deep foundations and/or removal of the problematic soils and replacement, as needed, with properly conditioned and compacted fill, to design and construction improvements to withstand the forces exerted during the expected shrink-swell cycles and settlements.

With implementation of the above listed condition, and implementation of recommendations in the geotechnical report, impacts would be lowered to a less than significant level. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Impact GEO-5:	The project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. **(No Impact)**

The project site is located within an urban area of San José 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. This conclusion is consistent with the findings of the 2017 MND. **(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)**

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. Geologic units of Holocene age, such as those found of the floor of the Santa Clara Valley, are generally not considered sensitive for paleontological resources, because biological remains younger than 10,000 years are not usually considered fossils. These sediments have low potential to yield fossil resources or to contain significant nonrenewable paleontological resources. These recent sediments, however, may overlie older Pleistocene sediments with high potential to contain paleontological resources. These older sediments, often found at depths greater than 10 feet below the ground surface, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates. Excavation for utilities associated with the GOSDC would not exceed 10 feet

in depths below the existing ground surface level, and the project would result in a less than significant impact. **(Less than Significant Impact)**

4.10 GREENHOUSE GAS EMISSIONS

The following discussion is based in part information contained in the Air Quality Impact Assessment prepared for the project by Atmospheric Dynamics, Inc. in January 2020. A copy of the report is attached to this Application as Appendix A.

4.10.1 Environmental Setting

4.10.1.1 *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 global warming potential (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.

4.10.1.2 *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.

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to greenhouse gas emissions and are applicable to the proposed project.

Envision San José 2040 Relevant Greenhouse Gas Emissions Policies

Policy	Description
MS-1.7	Encourage retrofits for existing buildings throughout San José to use green building principles in order to mitigate the environmental, economic, and social impact of those buildings, to achieve greenhouse gas reductions, and to improve air and water quality.
MS-2.8	Develop policies which promote energy reduction for energy-intensive industries. For facilities such as data centers, which have high energy demand and indirect greenhouse gas emissions, require evaluation of operational energy efficiency and inclusion of operational design measures as part of development review consistent with benchmarks such as those in EPA's EnergyStar Program for new data centers. Also require consideration of distributed power production for these facilities to reduce energy losses from electricity transmission over long distances and energy production methods such as waste-heat reclamation or the purchase of renewable energy to reduce greenhouse gas emissions.
MS-7.5	Evaluate local ordinances or enforcement actions that would result in improved methane control and capture at landfills in order to reduce greenhouse gas emissions and provide an additional fuel source in the near-term.

Multiple policies and actions in the General Plan have GHG implications, including land use, housing, transportation, water usage, solid waste generation and recycling, and reuse of historic buildings. The City's Green Vision, as reflected in these policies, also has a monitoring component that allows for adaptation and adjustment of City programs and initiatives related to sustainability and associated reductions in GHG emissions. The GHG Reduction Strategy is intended to meet the mandates as outlined in the *CEQA Guidelines* and standards for "qualified plans" as set forth by BAAQMD.

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

Beyond 2020, the emission reductions in the GHG Reduction Strategy (identified at the time of preparation of the 2015 Supplemental PEIR for the Envision San José 2040 General Plan and GHG Reduction Strategy) are not large enough to meet the City's identified 3.04 metric tons (MT)

CO_2e/SP efficiency metric for 2035. An additional reduction of 5,392,000 MT CO_2e per year would be required for the projected service population to meet the City's target for 2035.[38]

Achieving the substantial communitywide GHG emissions reductions needed beyond 2020 cannot be done alone with the measures identified in the GHG Reduction Strategy adopted by the City Council in 2015. The Final Supplemental PEIR disclosed that it will require an aggressive multiple-pronged approach that includes policy decisions and additional emission controls at the federal and state level, new and substantially advanced technologies, and substantial behavioral changes to reduce single occupant vehicle trips, especially to and from work places. Future policy and regulatory decisions by other agencies (such as the CARB, CPUC, CEC, MTC, and BAAQMD) and technological advances are outside the City's control, and therefore could not be relied upon as feasible mitigation strategies at the time of the latest revisions to the GHG Reduction Strategy (e.g., when the 2015 Final Supplemental PEIR was certified on December 15, 2015). The City Council adopted overriding considerations for the identified cumulative impact for the 2035 timeframe.

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

City of San José Municipal Code

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

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

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

In October 2008, the City adopted the Private Sector Green Building Policy (6-32) that establishes baseline green building standards for private sector new construction and provides a framework for the implementation of these standards. This policy requires that applicable projects achieve minimum

[38] As described in the Final Supplemental PEIR for the Envision San José 2040 General Plan, the 2035 efficiency target above, reflects a straight line 40 percent emissions reduction compared to the projected citywide emissions (10.90 MT CO_2e) for San José in 2020. It was developed prior to issuance of Executive Order S-30-15 in April 2015, which calls for a statewide reduction target of 40 percent by 2030 (five years earlier) to keep on track with the more aggressive target of 80 percent reduction by 2050.

green building performance levels using the Council adopted standards. The proposed project would be subject to this policy. Since the proposed commercial/industrial project would be greater than 25,000 square feet, the proposed data center buildings would be required to achieve LEED Silver certification, at minimum.[39]

San José Clean Energy

San José Clean Energy (SJCE) is the electricity provider for residents and businesses in the City of San José. SJCE sources the electricity and the Pacific Gas and Electric Company delivers it to customers over their existing utility lines. SJCE customers are automatically enrolled in the GreenSource program, which provides 80 percent GHG emission-free electricity. Customers can choose to enroll in SJCE's TotalGreen program at any time to receive 100 percent GHG emission free electricity form entirely renewable sources. For the proposed project, Equinix intends to opt-in to the SJCE 80% renewable energy supply option through PG&E as the distribution company delivering power to the site.

4.10.1.3 *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 undeveloped. No GHG emissions are generated from the site.

4.10.2 Impact Discussion

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

Note to reader: Where the following analysis applies to both the GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

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

[39] City of San José. *Private Sector Green Building*. Accessed December 24, 2019. Available at: https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/energy/green-building/private-sector-green-building.

GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in San José, the entire state of California, and across the nation and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

Per BAAQMD guidance for stationary-source projects such as the GOSBGF, the threshold to determine the significance of an impact from GHG emissions is 6,000 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 6,000 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 GOSBGF 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 GOSDC operation would not be included for comparison to this threshold, based on guidance in the BAAQMD's CEQA Guidelines.

GHG impacts from the GOSDC would be considered to have a less than significant impact if the GOSDC 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 GOSDC buildings. 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.

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 (2), means that the data center or laboratory must draw two (2) watts of electricity for every one (1) watt of power consumed by the IT/server equipment. It is equal to the total energy consumption of a data center (for all fuels) divided by the energy consumption

used for the IT equipment. The ideal PUE is one (1) where all power drawn by the facility goes to the IT infrastructure.

For the worst-case day, the peak PUE for the GOSDC would be 1.30 (total 97.5 MW demand of building on worst case day divided by 75.0 MW total critical IT load). The average annual PUE for the GOSDC would be 1.23 (total 92.25 MW demand of building average conditions divided by 75.0 MW expected critical IT load). These PUE estimates are based on design assumptions and represent worst case. SV1 LLC's experience with operation of other data centers is that the actual PUE will be closer to 1.2. Based on industry surveys, the average PUE for data centers is 1.67, although newly constructed data centers typically have PUEs ranging from 1.1 to 1.4.[40] The proposed project estimates lower PUE values than those of the 2017 MND, which projected an average PUE of 1.25 and a PUE of 1.40 under peak conditions of outdoor temperature/humidity.

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 has incorporated the following efficiency measures into the project design:

- High efficiency water-cooled chilled water system.
- Cool roof surface.
- Exceed Title 24 requirements.
- Bicycle parking.
- Low flow plumbing fixtures.
- Landscaping would meet City of San José requirements for low water use.

Construction-Related Emissions

GHG emissions associated with construction were computed to be 830 tons of CO_2e for the total construction period, as shown in Table 4.5-6. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City of San José 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. Implementation of mitigation measure PD AQ-1 would ensure impacts of the construction phase are less than significant by applying the BAAQMD's recommended construction BMPs to decrease impacts from fugitive dust.

Operation-Related Emissions

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

[40] Uptime Institute. Annual Data Center Survey Results - 2019. Available at: https://datacenter.com/wp-content/uploads/2019/06/data-center-survey-2019.pdf

demand for the GOSDC is 99 MW. Implementation of the energy measures described previously, and outlined in Table 2.3-1, would ensure the GOSDC's electricity usage does not contribute to a significant impact.

Project Mobile Emission Sources. Based on the facility's anticipated 42 employees and 30 visitors, the GOSDC is estimated to generate roughly 220 daily vehicle trips.

Project Water Consumption and Waste Generation. Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment.

The primary source of GHG emissions from the GOSDC is electricity use. As described above, Equinix intends to opt-in to the SJCE 80% renewable energy supply option, and electricity to the GOSDC would be provided by PG&E, a utility that is on track to meet the 2030 GHG emissions reductions target established by AB 32. To reduce GHG emissions and the use of energy related to building operations, the GOSDC includes a variety of energy efficiency measures, described above and in Table 2.3-1 in Section 2.3: Great Oaks South Data Center Facilities Description. As discussed in Section 4.8 Energy, the proposed project would use substantially less electricity than what was approved in the 2017 MND.

Furthermore, the GOSDC 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 CALGreen (California Code of Regulations, Part 11).

For all these reasons, the project would result in less than significant GHG emission impacts. This conclusion is consistent with the findings of the 2017 MND. **(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)**

The City's GHG Reduction Strategy measures for data centers around five strategies: energy, waste, water, transportation, and carbon sequestration. Some measures are considered mandatory for all proposed development projects while others are considered voluntary. Voluntary measures could be incorporated as mitigation measures for proposed projects at the discretion of the City. Compliance with the mandatory measures and any voluntary measures required by the City would ensure a project's consistency with the GHG Reduction Strategy. Projects that are consistent with the GHG Reduction Strategy, and constructed prior to 2035, would then be considered to have a less than significant impact related to GHG emissions. Below is a listing of the mandatory and voluntary criteria provided by the City of San José.

Mandatory Criteria

1. Consistency with the Land Use/Transportation Diagram;
2. Implementation of Green Building Measures;
    - Solar Site Orientation
    - Site Design

- Architectural Design
- Construction Techniques
- Consistency with City Green Building Ordinance and Policies

3. Pedestrian/Bicycle Site Design Measures;
    - Consistency with Zoning Ordinance
4. Salvage building materials and architectural elements from historic structures to be demolished to allow re-use, if applicable;
5. Complete an evaluation of operational energy efficiency and design measures for energy-intensive industries (e.g. data centers);
6. Preparation and implementation of the Transportation Demand Management (TDM) Program at large employers, if applicable;
7. Limits on drive-through and vehicle serving uses; all new uses that serve the occupants of vehicles (e.g. drive-through windows, car washes, service stations) must not disrupt pedestrian flow.

The proposed project is consistent with the General Plan designation for the site; therefore, the project is consistent with Criteria 1. The project is also consistent with Criteria 2 and 3. Specifically, the project proposes to achieve a minimum of LEED Silver certification for the GOSDC buildings and would be constructed in conformance with applicable pedestrian/bicycle site design measures identified in the Zoning Ordinance and General Plan. The project is also consistent with Criteria 5; the design measures incorporated in the project to maximize energy efficiency for the lifetime of a project are described in Section 2.3.2.6 Site Design: Energy Demand and Efficiency Measures. Criteria 4, 6 and 7 are not applicable to the proposed project because there are no historic structures on-site, the project would not be a large employer in the area, and the site does not propose drive-through uses.

Table 4.10-1 on the following page provides a summary of the voluntary criteria and describes the proposed project's compliance with each criterion.

Table 4.10-1: Voluntary Greenhouse Gas Reduction Strategy Criteria		
Policies	**Description of Project Measure**	**Project Conformance/ Applicability**
BUILT ENVIRONMENT AND RECYCLING		
Installation of solar panels or other clean energy power generation sources on development sites, especially over parking areas	The project does not propose on-site renewable power generation.	Not Proposed
Use of recycled water wherever feasible and cost-effective (including non-residential uses outside of the Urban Service Area)	The closest recycled water line is located in the Monterey Highway, approximately one mile east of the project site. the project does not propose to use recycled water on-site.	Not Proposed
TRANSPORTATION AND LAND USE		
Promote car share programs to minimize the need for parking spaces	The project is not a large employment use that would warrant a car share program.	Not Applicable
Limit parking above code requirements	The project proposes to provide 252 parking spaces regular stalls consistent with the City's requirements.	Project is Parked at or below Code Requirements
Consider opportunities for reducing parking spaces (including measures such as shared parking, TDM, and parking pricing to reduce demand)	Given the nature of the proposed use, the project does not propose shared parking or TDM measures.	Not Applicable

For all the reasons listed above, the project would not conflict with plans, policies, or regulations aimed at reducing GHG emissions. Implementation of the proposed project would result in less than significant GHG emission impacts for development. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

4.11 HAZARDS AND HAZARDOUS MATERIALS

The following discussion is based, in part, on a Phase I Environmental Site Assessment (ESA) prepared for the project by Cornerstone Earth Group, in October 2019. A copy of the report is included in Appendix G.

4.11.1 Environmental Setting

4.11.1.1 *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 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) and State Water Resources Control Board (SWRCB).[41]

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to hazards and hazardous materials and are applicable to the proposed project.

Envision San José 2040 Relevant Hazards Policies

Policy	Description
EC-7.1	For development and redevelopment projects, require evaluation of the proposed site's historical and present uses to determine if any potential environmental conditions exist that could adversely impact the community or environment.
EC-7.2	Identify existing soil, soil vapor, groundwater and indoor air contamination and mitigation for identified human health and environmental hazards to future users and provide as part of the environmental review process for all development and redevelopment projects. Mitigation measures for soil, soil vapor and groundwater contamination shall be designed to avoid adverse human health or environmental risk, in conformance with regional, state and federal laws, regulations, guidelines and standards.

4.11.1.2 *Existing Conditions*

Project Site

The approximately 18-acre site is undeveloped. The data center site is located approximately 200 feet above mean sea level. Groundwater beneath the site has historically been found at depths between 30 to 70 feet below ground surface (bgs) and flows to the east. Fluctuations in the groundwater level may occur due to seasonal changes, variations in rainfall and underground drainage patterns, and other factors.

Airports

The Norman Y. Mineta San José International Airport is located approximately 15 miles northwest of the project sites. Reid-Hillview Airport is located approximately 10 miles north of the project sites. The project is not located within Airport Influence Areas of either airport or in the vicinity of a private airstrip.

[41] CalEPA. "Cortese List Data Resources." Accessed December 18, 2019. https://calepa.ca.gov/sitecleanup/corteselist.

Wildfire Hazards

The project site is located in a developed, urban area and surrounded by urban development. The project site is not located at the urban edge and, therefore, is not located within a Very-High Fire Hazard Severity Zone, as determined by CalFire.

4.11.1.3 *Site History*

Based on aerial photographs of the site, since at least 1939 until 1982, the site and surrounding area were part of a larger orchard and agricultural fields. Up to five structures, which appear to be a farmhouse and sheds were also located on-site. By 1982, the site boundaries are now present, and the site is bounded by the present-day San Ignacio Avenue, Via Del Oro, and Great Oaks Boulevard. By 1998, much of the site was been converted to fallow field, except for the northeast corner of the site where multiple sheds were still present. By 2005, the sheds were been removed and the site is a tilled field. There have been no substantial changes to the project site since 2005.

Multiple large light industrial and commercial structures and associated parking lots have been developed in the surrounding area.

Off-Site Environmental Concerns

The data center site is surrounded by light industrial and commercial uses to the west, north, and east. There are residential uses south of the site. Potential off-site environmental concerns that could affect the project include releases from the former Fairchild site, located at 101 Bernal Avenue, approximately 1,500 feet east of the project site.

4.11.2 Impact Discussion

	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?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The primary modifications to the project evaluated in the 2017 MND that may affect Hazards and Hazardous Materials is an expansion of the GOSBGF to include 15 additional generators and the GOSBGF's associated diesel fuel storage.

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, unless the project risks exacerbating those environmental hazards are risks that already exist. In light of this ruling, the effect of existing hazards and hazardous materials on future data center users would not be considered an impact under CEQA. Nevertheless, the City has policies and regulations that address existing conditions affecting a proposed project, which are discussed below.

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 GOSBGF would include the use and storage of diesel fuel in aboveground tanks. The tanks would be double-walled and have leak detection systems and would be located directly beneath each large generator. 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 GOSDC 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. This conclusion is consistent with the findings of the 2017 MND. **(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)**

As discussed in the 2017 MND, the former Fairchild site likely impacted groundwater below the site. Based on the Phase I investigation completed at the site in 2019, the volatile organic compounds (VOC) concentrations in groundwater below the Fairchild site do not appear to exceed drinking water maximum contaminant levels (MCLs) or the Water Board's Tier 1 environmental screening levels (ESLs) and do not appear to represent a vapor intrusion concern. Therefore, this release is no longer an environmental concern for the site, and the project would have a less than significant impact. **(Less than Significant Impact)**

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 nearest school to the project site is Stratford Preschool, located 0.8 miles southwest of the site. The project would not routinely generate hazardous air emissions (See Section 4.5 Air Quality for a full discussion of the air emissions and public health), nor would it handle acutely hazardous materials or hazardous waste and therefore, would not impact schools within the project area.

The project would comply with all relevant laws and regulations in regard to hazardous materials and compliance with the regulations discussed under Impact HAZ-2 would result in a less than significant impact. This conclusion is consistent with the findings of the 2017 MND. **(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 with Mitigation Incorporated into the Project Design)**

Impacts from Historic Site Operations

The project site was historically used for agricultural purposes. Thus, pesticides may have been applied to crops in the normal course of farming operations. The project-specific ESA detected

concentrations of lead, arsenic, and mercury that appear of natural background/ambient levels[42], and therefore pose a less than significant impact. There are no recognized environmental conditions identified on the project site that could result in potential health impacts to future users of the site. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

Impacts of Off-Site Facilities on the Project

Concentrations of organochlorine pesticides (DDD, DDE and DDT) and lead exceeding residential and commercial screening levels were detected in soil samples collected off-site on the southwesterly adjacent parcel (APN 706-02-058). The greatest concentrations were generally identified in soil near the former off-site structure locations. Total DDT (the sum of DDD, DDE and DDT) was detected in several of these off-site soil samples at concentrations exceeding the California's hazardous waste criteria. Soluble lead concentrations exceeding the Soluble Threshold Limit Concentration (STLC) also were identified in some of the off-site soil samples. It is possible that impacted soil could be tracked onto the project site from the adjacent parcel during construction activities, such as grading, travel of construction vehicles over the affected site, movement of equipment or materials through the affected site, etc.

Mitigation Incorporated into the Project Design:

PD HAZ-1: The project proposes to implement the following measures which would reduce the potential for tracking of impacted soil from the adjacent parcel to the project site.

- During construction activities (e.g. grading, vehicle travel, movement of equipment or materials, etc.), adjacent to APN 706-02-058, the project contractor shall fence the southwesterly adjacent parcel (APN 706-02-058) separately from the rest of the site.

With implementation of the mitigation measure, the project would not create a significant hazard to the public or the environment. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Impact HAZ-5:	The project would not be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport. 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)**

As discussed in the 2017 MND, the project site is not located in proximity to an airport, and is not in an Airport Influence Area for any airport. The GOSDC and GOSBGF would be constructed in accordance with FAA safety recommendations and would not create a hazard to aircraft or interfere with airport operations; therefore, impacts would be less than significant. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

[42] Cornerstone Earth Group. *Phase I ESA: 300 Great Oaks Boulevard, Section 9.3: Soil Quality*. October 2019.

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. This conclusion is consistent with the findings of the 2017 MND. **(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. This conclusion is consistent with the findings of the 2017 MND. **(No Impact)**

4.12 HYDROLOGY AND WATER QUALITY

4.12.1 Environmental Setting

4.12.1.1 *Regulatory Framework*

Overview

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 EPA and the 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). The project site is within the jurisdiction of the San Francisco Bay RWQCB.

Federal and State

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) established the National Flood Insurance Program (NFIP) 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 (FIRMs) that identify Special Flood Hazard Areas (SFHAs). 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.

Statewide Construction General Permit

The SWRCB has implemented an 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 and Local

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 Permit Provision C.3.

The San Francisco Bay RWQCB re-issued the Municipal Regional Stormwater NPDES Permit (MRP) in 2015 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.[43] 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 new development 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 local rivers, streams, and creeks. Projects may be deemed exempt from these requirements if they do not meet the minimized size threshold, drain into tidally influenced areas or directly into the Bay, or drain into hardened channels, or if they are infill projects in subwatersheds or catchment areas that are greater than or equal to 65 percent impervious.

Water Resources Protection Ordinance and District Well Ordinance

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.

Post-Construction Urban Runoff Management (City Council Policy No. 6-29)

The City of San José's Policy No. 6-29 implements the stormwater treatment requirements of Provision C.3 of the MRP. City Council Policy No. 6-29 requires new development and redevelopment projects to implement post-construction Best Management Practices (BMPs) and Treatment Control Measures (TCMs). This policy also established specific design standards for post-construction TCMs for projects that create or replace 10,000 square feet or more of impervious surfaces.

[43] MRP Number CAS612008

Post-Construction Hydromodification Management (City Council Policy No. 8-14)

The City of San José's Policy No.8-14 implements the hydromodification management requirements of Provision C.3 of the MRP. Policy No. 8-14 requires new development and redevelopment projects that create or replace one acre or more of impervious surface area, and are located within a subwatershed that is less than 65 percent impervious, to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt generation, or other impacts to local rivers, streams, and creeks. The policy requires these projects to be designed to control project-related hydromodification through a Hydromodification Management Plan (HMP). Projects that do not meet the minimum size threshold, drain into tidally influenced areas or directly into the Bay, or are infill projects in subwatersheds or catchment areas that are greater than or equal to 65 percent impervious would not be subject to the HMP requirement.

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to hydrology and are applicable to the proposed project.

Envision San José 2040 Relevant Hydrology Policies

Policy	Description
IN-3.7	Design new projects to minimize potential damage due to stormwaters and flooding to the site and other properties.
IN-3.9	Require developers to prepare drainage plans for proposed developments that define needed drainage improvements per City standards.
MS-3.4	Promote the use of green roofs (i.e., roofs with vegetated cover), landscape-based treatment measures, pervious materials for hardscape, and other stormwater management practices to reduce water pollution
ER-8.1	Manage stormwater runoff in compliance with the City's Post-Construction Urban Runoff (6-29) and Hydromodification Management (8-14) Policies.
ER-8.3	Ensure that private development in San José includes adequate measures to treat stormwater runoff.
EC-4.1	Design and build all new or remodeled habitable structures in accordance with the most recent California Building Code and municipal code requirements as amended and adopted by the City of San José, including provisions for expansive soil, and grading and stormwater controls.
EC-5.7	Allow new urban development only when mitigation measures are incorporated into the project design to ensure that new urban runoff does not increase flood risks elsewhere.
EC-5.16	Implement the Post-Construction Urban Runoff Management requirements of the City's Municipal NPDES Permit to reduce urban runoff from project sites.

4.12.1.2 *Existing Conditions*

Under existing conditions, the site is undeveloped and is entirely pervious. Runoff from the site likely contains pollutants typical of urban, developed environments, including sediment, and plant debris. Storm drain lines serving the project area include a 48-inch storm main in San Ignacio Avenue, a 24-inch storm main in Via Del Oro, and a 48 inch storm main in Great Oaks Boulevard.

Surface Water Runoff

The project site is located within the Guadalupe Watershed, a 170-square-mile area with multiple small-creek watersheds, and stormwater runoff from the project site drains into Canoas Creek. Canoas Creek is a tributary to the Guadalupe River, an alluvial stream that originates in the Santa Cruz Mountains west and south of San José and flows in a northerly direction to the San Francisco Bay.

Groundwater

Groundwater was not encountered during field explorations at the project site. According to public well data, groundwater in the project area has been found at depths between 30 feet to 70 feet below ground surface (bgs).[44] Fluctuations in the groundwater level may occur due to seasonal changes, variations in rainfall and underground drainage patterns, and other factors.

The project site is within the Santa Clara Plain Recharge area of the Santa Clara Valley Basin where groundwater occurs under unconfined conditions. The site is located within urbanized areas of San José and is not within or adjacent to a SCVWD groundwater recharge facility, such as a SCVWD recharge pond.[45]

Flooding

The project site is not located in a 100-year floodplain. According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, the project site is designated Zone D, which is defined as areas where flood hazards are undetermined, but possible.[46] There are no City floodplain requirements for Zone D.

According to the General Plan EIR, the project site is located in the Anderson Dam inundation area. In the event of a complete dam failure, the project site could be inundated by floodwaters.

Earthquake-Induced Waves and Flooding from Sea Level Rise

Due to the project sites inland location and distance from large bodies of water (i.e., the San Francisco Bay), it is not subject to seiche or tsunami hazards, or sea level rise.

[44] Langan Engineering & Environmental Services, Inc. *Updated Geotechnical Investigation SV12 Great Oaks Boulevard and Via Del Oro.* June 8, 2018.
[45] Santa Clara Valley Water District. *Groundwater Management Plan.* 2012.
[46] Federal Emergency Management Agency. *Flood Insurance Rate Map: Panel 06085C0406H*. May 18, 2009.

4.12.2 Impact Discussion

	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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

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 GOSDC would create 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 GOSDC would include stormwater quality best management practices (BMPs) such as directing site runoff into bioswales. 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-Related Water Quality Impacts

Implementation of the project would disturb 17.89 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 project shall comply with the requirements of the City of San José Grading Ordinance, including implementation of erosion and dust control during site preparation, and the City's Zoning Ordinance requirements for keeping adjacent streets free of dirt and mud during construction. These requirements are included in the project conditions listed below.

Mitigation Incorporated into the Project Design:

PD HYD-1: The project 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 be covered trucks or maintain at least two feet of freeboard.
- All paved access roads, parking areas, staging areas and residential streets adjacent to the construction site 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 project proponent shall comply with the City of San José Grading Ordinance, including implementing erosion and dust control during site preparation and with the City of San José Zoning Ordinance requirements for keeping adjacent streets free of dirt and mud during construction.
- A Storm Water Permit shall be administered by the SWRCB. Prior to construction grading for the proposed land uses, the project proponents will file an NOI to comply with the General Permit and prepare a SWPPP which addresses measures that would be included in the project to minimize and control construction and post-construction runoff. Measures will include, but are not limited to, the aforementioned RWQCB Best Management Practices.
- The SWPPP shall be posted at the project site and shall be updated to reflect current site conditions.
- When construction is complete, a Notice of Termination for the General Permit for Construction shall be filed with the SWRCB. The Notice of Termination shall document that all elements of the SWPPP have been executed, construction materials and waste have been properly disposed of, and a post-construction stormwater management plan is in place as described in the SWPPP for the site.

Impervious and Pervious Surfaces

New catch basins and storm drain lines would be installed on the site as part of the project, and would connect to the existing City of San José storm drain system. Bioretention areas would be installed in on-site landscape areas as part of the project, 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 and beneficial landscaping (i.e., minimizing irrigation, runoff, pesticides and fertilizers) would be implemented. On-site drainage facilities would be designed to meet City of San José standards and would drain to the existing storm drain system.

The current site includes less than two percent impervious cover and 98.7 percent pervious cover. The project would include approximately 83 percent impervious cover and 17 percent pervious cover, as shown in Table 4.12-1.

Table 4.12-1: Pervious/Impervious Surfaces

	Impervious (sf)	Pervious (sf)	Total Area (sf)	Percent Impervious
Existing	0	779,465	779,465	0%
Proposed	645,983	133,482	779,645	82.85%

As discussed in the 2017 MND, the increase in impervious surfaces could result in a corresponding increase in site runoff. The project includes installation of a bioretention basin and underground detention to reduce peak runoff from the site. With the measures included in the project, the existing storm drain system that serves the project site would continue to have sufficient capacity to accommodate project flows. Therefore, the project would have a less than significant impact on the City's storm drain system. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

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)**

As discussed above and in the 2017 MND, the project proposes excavation for building foundation and utilities and proposes subterranean construction in the form of an underground detention basin. Groundwater has historically been encountered at a depth of 30 feet bgs. Construction of the proposed project would not encounter groundwater or require groundwater pumping during excavation for utilities or installation of equipment foundations. While with the Santa Clara Plain Recharge area of the Santa Clara Valley Basin where groundwater occurs under unconfined conditions, the site is not within or adjacent to a SCVWD groundwater recharge facility, such as a SCVWD recharge pond. Development would occur on vacant sites planned for urban uses and site surface water runoff would ultimately be conveyed to Canoas Creek, which is a recharge facility. For these reasons, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. This conclusion is consistent with the findings of the 2017 MND. **(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)**

As discussed in the 2017 MND, the project would not alter the course of a stream, river, or other waterway. As discussed under Impact HYD-1, the project would result in an increase in impervious surface area as compared to existing conditions and could result in an increase in site runoff. The installation of a bioretention basin and underground detention would reduce peak runoff from the site. Additionally, with the measures included in the project, the existing storm drain system that serves the project site will continue to have a sufficient capacity to accommodate project flows. Additionally, the General Plan FEIR concluded that with the regulatory programs currently in place, stormwater runoff from new development would have a less than significant impact on stormwater quality. Compliance with the City's Grading Policy, the City's Urban Runoff Policy, and RWQCB's MRP NPDES Permit/C.3. requirements would result in less than significant impacts on water quality. This conclusion is consistent with the findings of the 2017 MND. **(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)**

As discussed in the 2017 MND, the project site is not subject to inundation by tsunami or seiche. Further, the project would not exacerbate environmental risks related to 100-year floodplains, seiche,

tsunami, sea-level rise, mudslide hazards, or dam failure inundation areas. Therefore, there would be no risk of release of pollutants at the project site due to tsunamis or seiches. **(No Impact)**

While the project site is located in the Anderson Dam Inundation Area, in the event of a complete dam failure, the SCVWD's comprehensive dam safety program and emergency action plan ensures public safety. For these reasons, the site is not subject to a significant risk of loss, injury, or death involving dam inundation. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

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 in the 2017 MND and under Impacts HYD-1 and HYD-2, the project would comply with applicable water quality control regulations and would not substantially decrease groundwater supplies or interfere with groundwater recharge. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

4.13 LAND USE AND PLANNING

4.13.1 Environmental Setting

4.13.1.1 *Regulatory Framework*

Santa Clara Valley Habitat Plan/Natural Community Conservation Plan

The Santa Clara Valley Habitat Plan/Natural Community Conservation Plan (Habitat Plan) is a conservation program intended to promote the recovery of endangered species and enhance ecological diversity and function, while accommodating planned growth in approximately 500,000 acres of southern Santa Clara County. As discussed in Section 4.6 Biological Resources, the project is designated as *Golf Course/Urban Parks* and is located in Fee Zone B (Agricultural and Valley Floor Lands). Zone B lands typically consist of agricultural and valley floor lands covered with grassland, row crops, orchards or vineyards.

Envision San José 2040 General Plan

The eastern portion of the project site is currently designated as *IP – Industrial Park* and the western portion is designated as *TEC – Transit Employment Center* in the Envision San José 2040 General Plan (General Plan). The *TEC – Transit Employment Center* designation is applied to areas planned for intensive job growth because of their importance as employment districts and access to transit and other facilities and services. The *IP – Industrial Park* General Plan and zoning designation is intended for a wide variety of uses such as research and development (R&D), manufacturing, assembly, testing, and offices. Uses allowed in the *IP – Industrial Park* designation are considered appropriate in the *TEC – Transit Employment Center* designation, as are supportive commercial uses.

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to land use and are applicable to the proposed project.

Envision San José 2040 Relevant Land Use Policies

Policy	Description
CD-1.12	Use building design to reflect both the unique character of a specific site and the context of surrounding development and to support pedestrian movement throughout the building site by providing convenient means of entry from public streets and transit facilities where applicable, and by designing ground level building frontages to create an attractive pedestrian environment along building frontages. Unless it is appropriate to the site and context, franchise-style architecture is strongly discouraged.
CD-4.9	For development subject to design review, ensure the design of new or remodeled structures is consistent or complementary with the surrounding neighborhood fabric (including but not limited to prevalent building scale, building materials, and orientation of structures to the street).

4.13.1.2 *Existing Conditions*

The project site is zoned as *IP – Industrial Park.* As discussed above, the *IP* designation is intended for a wide variety of uses such as research and development (R&D), manufacturing, assembly, testing, and offices. The *TEC* designation is for areas planned for intensive job growth.

Adjacent land uses include industrial and residential uses. To the east of the project site, across Great Oaks Boulevard, land uses are designated *Combined Industrial/Commercial* and *Neighborhood/Community Commercial* uses. South of the project site, across Santa Teresa Boulevard, is designated as *Residential Neighborhood*.

Since the 2017 MND was prepared and approved, changes were made to the project site's parcel numbers and lot lines. Formerly, the data center site APNs were 706-02-053 and 706-02-054, with portions of 706-02-055 and 706-02-056. These were renumbered, respectively, as 706-02-60, 706-02-057, 706-02-58, and 706-02-059.

4.13.2 Impact Discussion

	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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The modifications to the project do not affect land use impacts as described in the 2017 MND.

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

As stated in the 2017 MND, the proposed use and density are consistent with the General Plan designation and what was envisioned for the site. The project would not introduce an incompatible use in the area, and would not include any physical features that would physically divide the community (e.g. blocking of roadways or sidewalks). For these reasons, construction of the 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)**

As stated in the 2017 MND, the proposed project would be designed in accordance with the City of San José's design guidelines. The guidelines address design aspects including building setback and height, parking requirements, and landscaping. Additionally, as discussed in Section 4.6 Biological Resources, a Habitat Plan application was submitted and fees were paid in 2018 prior to the issuance of a grading permit, following approval of the 2017 MND. The project's land use impacts would be less than significant, which is consistent with the findings of the 2017 MND. **(Less Than Significant Impact)**

4.14 MINERAL RESOURCES

4.14.1 Environmental Setting

4.14.1.1 *Regulatory Framework*

State

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 (SMGB), after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance.

Pursuant to the mandate of the SMARA, the SMGB has designated the Communications Hill Area (Sector EE), bounded generally by the Southern Pacific Railroad, Curtner Avenue, SR 87, and Hillsdale Avenue as containing mineral deposits that are of regional significance as a source of construction aggregate materials. Neither the State Geologist nor the SMGB have classified any other areas in San José as containing mineral deposits of statewide significance or requiring further evaluation.

4.14.1.2 *Existing Conditions*

The project site is located in Mineral Resource Zone One, which is defined as areas where adequate information indicates no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.[47] There are no known mineral resources located on or adjacent to the project site.

[47] California Department of Conservation. *Generalized Mineral Land Classification Map of the South San Francisco Bay Production-Consumption Region.* 1996.

4.14.2 Impact Discussion

	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?	☐	☐	☐	☒

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. This conclusion is consistent with the findings of the 2017 MND. **(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. This conclusion is consistent with the findings of the 2017 MND. **(No Impact)**

4.15 NOISE AND VIBRATION

The following analysis is based, in part, on a Noise and Vibration Assessment prepared by *Illingworth & Rodkin, Inc*. in December 2019. A copy of this report is included as Appendix H of this Application.

4.15.1 Environmental Setting

4.15.1.1 *Background Information*

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.[48] 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.

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/second (in/sec) PPV.

[48] 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}.

4.15.1.2 *Regulatory Framework*

Federal

Federal Transit Administration Vibration Limits

The Federal Transit Administration (FTA) has developed vibration impact assessment criteria for evaluating vibration impacts associated with transit projects. The FTA has proposed vibration impact criteria based on maximum overall levels for a single event. The impact criteria for groundborne vibration are shown in Table 4.15-1 below. There are established criteria for frequent events (more than 70 events of the same source per day), occasional events (30 to 70 vibration events of the same source per day), and infrequent events (less than 30 vibration events of the same source per day). These criteria can be applied to development projects in jurisdictions that lack vibration impact standards.

Table 4.15-1: Groundborne Vibration Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (VdB inch/sec)		
	Frequent Event	Occasional Events	Infrequent Events
Category 1: Buildings where vibration would interfere with interior operations	65	65	65
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime use	75	78	83

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

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.

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to noise and are applicable to the proposed project.

Envision San José 2040 Relevant Noise Policies

Policy	Description
EC-1.2	Minimize the noise impacts of new development on land uses sensitive to increased noise levels (Categories 1, 2, 3, and 6) by limiting noise generation and by requiring use of noise attenuation measures such as acoustical enclosures and sound barriers, where feasible. The City considers significant noise impacts to occur if a project would: • Cause the DNL at noise sensitive receptors to increase by five dBA DNL or more where the noise levels would remain "Normally Acceptable"; or • Cause the DNL at noise sensitive receptors to increase by three dBA DNL or more where noise levels would equal or exceed the "Normally Acceptable" level.
EC-1.3	Mitigate noise generation of new nonresidential land uses to 55 dBA DNL at the property line when located adjacent to existing or planned noise sensitive residential and public/quasi-public land uses.
EC-1.6	Regulate the effects of operational noise from existing and new industrial and commercial development on adjacent uses through noise standards in the City's Municipal Code.
EC-1.7	Require construction operations within San José to use best available noise suppression devices and techniques and limit construction hours near residential uses per the City's Municipal Code. The City considers significant construction noise impacts to occur if a project located within 500 feet of residential uses or 200 feet of commercial or office uses would: • Involve substantial noise generating activities (such as building demolition, grading, excavation, pile driving, use of impact equipment, or building framing) continuing for more than 12 months. For such large or complex projects, a construction noise logistics plan that specifies hours of construction, noise and vibration minimization measures, posting or notification of construction schedules, and designation of a noise disturbance coordinator who would respond to neighborhood complaints will be required to be in place prior to the start of construction and implemented during construction to reduce noise impacts on neighboring residents and other uses.
EC-2.3	Require new development to minimize vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, a vibration limit of 0.08 in/sec PPV (peak particle velocity) will be used to minimize the potential for cosmetic damage to a building. A vibration limit of 0.20 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction.

City of San José Municipal Code

The City's Municipal Code contains a Zoning Ordinance that limits noise levels at adjacent properties. Chapter 20.50.300 states that sound pressure levels generated by any use or combination of uses on a property zoned for industrial use shall not exceed 55 dBA at any property line shared with land zoned for residential purposes, 60 dBA at any property line shared with land zoned for commercial purposes, and 70 dBA at any property line shared with land zoned for industrial or use

other than commercial or residential purposes, except upon issuance and in compliance with a Conditional Use Permit. The code is not explicit in terms of the acoustical descriptor associated with the noise level limit. Consistent with General Plan policy EC-1.3, a reasonable interpretation of this standard would identify the ambient base noise level criteria as the day/night noise level (DNL).

Chapter 20.100.450 of the Municipal Code establishes allowable hours of construction within 500 feet of a residential unit between 7:00 AM and 7:00 PM Monday through Friday unless permission is granted with a development permit or other planning approval. No construction activities are permitted on the weekends at sites within 500 feet of a residence unless permission is granted with a development permit or other planning approval.

4.15.1.3 *Existing Conditions*

The project site is currently undeveloped. Northeast of the site, across Via Del Oro, are office, commercial, and light industrial uses, including a Kaiser Permanente medical facility. To the northwest of the site, across San Ignacio Avenue, are office, commercial, and light industrial uses. To the southwest, across and along Santa Teresa Boulevard, are single-family residences. To the southeast, across Great Oaks Boulevard, are office, commercial, and manufacturing uses.

Illingworth and Rodkin, Inc. has completed multiple noise monitoring surveys in the vicinity to document existing noise conditions at the project site and at nearby receptors. A survey was completed between Tuesday, January 26, 2016 and Thursday, January 28, 2016, including one long-term measurements (LT-1) and two short-term measurements (ST-1 and ST-2) relevant to this project. An additional survey was completed between Tuesday, October 30, 2018 and Friday, November 2, 2018 for a project located approximately 700 feet northeast of the site at 6230 San Ignacio Avenue. This survey consisted of one long-term measurement (LT-2) relevant to this project.

Long-term noise measurement LT-1 was located about 100 feet northeast of Santa Teresa Boulevard. Noise levels measured at this site were primarily the result of traffic along the Santa Teresa Boulevard. Hourly average noise levels ranged from 60 to 67 dBA L_{eq} during the day, and 51 to 62 dBA L_{eq} at night. The day-night average noise level at this location was calculated to be 65 dBA DNL. Long-term noise measurement LT-2 was located about 60 feet southeast of San Ignacio Avenue. Hourly average daytime noise levels ranged from 55 to 66 dBA Leq, and hourly average nighttime levels ranged from 50 to 65 dBA Leq. The day-night average noise level at this location was calculated to be between 65 and 67 dBA DNL.

A recent survey was completed on Tuesday, December 3, 2019, consisting of four short-term measurements (ST-5 through ST-8). Table 4.15-1 and Table 4.15-2 below summarize the results of the noise measurement surveys. Noise measurement locations are shown in Figure 4.15-1. Refer to Appendix H for additional details.

Table 4.15-2: Summary of Long-Term Measurement Data				
Location	**Date**	**Hourly-Average Noise Level, L_{eq}**		**DNL**
		Daytime	**Nighttime**	
LT-1: ~100 feet Northeast of Santa Teresa Boulevard Centerline	Tuesday, 1/26/2016	60 – 65	55 – 59	65
	Wednesday, 1/26/2016	60 – 67	50 – 62	
	Thursday, 1/28/2016	62 – 65	51 – 62	
LT-2: ~60 feet Southeast of San Ignacio Avenue Centerline	Tuesday, 10/30/2018	56 – 66	53 – 54	65 to 67
	Wednesday, 10/31/2018	55 – 65	50 – 64	
	Thursday, 11/1/2018	58 – 66	51 – 65	
	Friday, 11/2/2018	61 – 64	51 – 64	

Table 4.15-3: Summary of Short-Term Measurement Data						
Noise Measurement Location	**$L_{(1)}$**	**$L_{(10)}$**	**$L_{(50)}$**	**$L_{(90)}$**	**L_{eq}**	**Primary Noise Sources**
ST-1: Front of 214 Paraiso Court (Thursday, 1/28/2016, 12:20 PM – 12:30 PM)	69	55	49	47	55	Traffic on Santa Teresa Boulevard (shielded by residence)
ST-2: ~75 feet Northwest of Great Oaks Boulevard Centerline (Thursday, 1/28/2016, 1:00 PM –1:10 PM)	67	64	56	52	60	Traffic on Great Oaks Boulevard
ST-3: ~30 feet Northeast of Via Del Oro Centerline (Tuesday, 12/3/2019, 10:40 AM – 10:50 AM)	75	68	54	46	64	Traffic on Via Del Oro
ST-4: ~45 feet Northwest of San Ignacio Avenue Centerline (Tuesday, 12/3/2019, 11:00 AM – 11:10 AM)	73	69	57	48	64	Traffic on San Ignacio Avenue
ST-5: ~50 feet Southwest of Santa Teresa Boulevard Centerline (Tuesday, 12/3/2019, 11:20 AM – 11:30 AM)	80	74	63	55	70	Traffic on Santa Teresa Boulevard
ST-6: ~60 feet Southeast of Great Oaks Boulevard Centerline (Tuesday, 12/3/2019, 11:40 AM – 11:50 AM)	69	64	57	48	60	Traffic on Great Oaks Boulevard

NOISE MEASUREMENT LOCATIONS | FIGURE 4.15-1

4.15.2 Impact Discussion

	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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The primary modifications to the 2017 MND that may affect Noise are the modifications to the generators and other mechanical equipment proposed by the GOSBGF.

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 with Mitigation Incorporated into the Project Design)**

Construction-Related Noise

Chapter 20.100.450 of the City of San José's Municipal Code establishes allowable hours of construction within 500 feet of a residential unit between 7:00 AM and 7:00 PM Monday through Friday unless permission is granted with a development permit or other planning approval. No construction activities are permitted on the weekends at sites within 500 feet of a residence unless permission is granted with a development permit or other planning approval. Policy EC-1.7 of the City of San José's General Plan requires that all construction operations within the City use best available noise suppression devices and techniques and to limit construction hours near residential uses per the Municipal Code allowable hours. Further, the City of San José considers significant construction noise impacts to occur if a project located within 500 feet of residential uses or 200 feet of commercial or office uses would involve substantial noise-generating activities (such as building

demolition, grading, excavation, pile driving, use of impact equipment, or building framing) continuing for more than 12 months.

Construction activities for individual projects are typically 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. Typical construction noise levels at a distance of 50 feet are shown in Table 4.15-4 and Table 4.15-5. Table 4.15-4 shows the average noise level ranges by construction phase, and Table 4.15-5 shows the maximum noise level ranges for different construction equipment. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional five to 10 dBA noise reduction at distant receptors.

Table 4.15-4: Typical Ranges of Construction Noise Levels at 50 Feet, Leq (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 4.15-5: 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.

Project construction is scheduled for separate phases for each of the three buildings. Construction of the first GOSDC building, SV12, would begin in the fourth quarter of 2020 and is anticipated to finish in the first quarter of 2022, for a total of up to 15 months. Construction of the second GOSDC building, SV18, would begin in the second quarter of 2023 and is anticipated to finish in the fourth quarter of 2024, for a total of up to 18 months. Construction of the third GOSDC building, SV19, would begin in the second quarter of 2026 and is anticipated to finish in the fourth quarter of 2027, for a total of up to 18 months. The construction of the proposed project would involve site preparation, grading and excavation, trenching, building erection, interior/architectural coating, and paving. A list of anticipated equipment to be used during each phase of construction was provided for the project. Drilled piles would be used for the construction of foundations. Table 4.15-6 below shows the anticipated construction noise levels calculated for each phase of construction using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM). Note that the Site Preparation and Grading/Excavation phases would occur only once for the entire site prior to construction of SV12, SV18, and SV19. All other phases would occur once per construction of each data center building.

Table 4.15-6: Calculated Construction Noise Levels for Each Phase of Construction

Construction Phase	At Distance of 50 ft.	
	L_{eq}, dBA	**L_{max}, dBA**
Site Preparation (20 days)	85	85
Grading/Excavation (40 days)	88	88
Trenching (60 days)	83	84
Building-Exterior (230 days)	85	85
Building-Interior (40 days)	78	78
Paving (20 days)	86	90

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. As indicated by Table 4.15-6, at 50 feet from the noise source, maximum instantaneous noise levels generated by project construction equipment are calculated to range from 78 to 90 dBA L_{max} and hourly average noise levels are calculated to range from 78 to 88 dBA L_{eq}. Most land uses surrounding the site are non-noise sensitive industrial park uses such as parking, bus yards, etc. Residences are located 700 feet south of the site. There are no residences located within 500 feet of project construction. Commercial uses are located as close as 150 feet to the north and west.

Residences southwest of the site across Santa Teresa Boulevard would be exposed to a maximum noise level of 67 dBA L_{max} during paving, and maximum noise levels of 55 to 65 dBA L_{max} during other phases of construction when construction is located at the southern side of the site. Typical hourly average noise levels of 55 to 65 dBA L_{eq} are anticipated at the residences during busy periods of construction located on the southern side of the site. Commercial uses, about 150 feet to the northeast across Via Del Oro and about 150 feet to the northwest across San Ignacio Avenue, would be exposed to a maximum noise level of 80 dBA L_{max} during paving, and maximum noise levels of

68 to 78 during other phases of construction when construction is located along the northern or western sides of the site. Typical hourly average noise levels of 68 to 78 dBA L_{eq} are anticipated at the commercial uses during busy periods of construction located adjacent to these areas. Noise levels would be lower as construction moves away from site boundaries or into shielded areas.

Policy EC-1.7 of the City's General Plan states that for large or complex projects within 500 feet of residential land uses or within 200 feet of commercial land uses or offices involving substantial noise-generating activities lasting more than 12 months, a construction noise logistics plan would be required. The plan should specify hours of construction, noise and vibration minimization measures, posting or notification of construction schedules, and designation of a noise disturbance coordinator who would respond to neighborhood complaints. The noise logistics plan would be required to be in place prior to the start of construction and implemented during construction to reduce noise impacts on neighboring residents and other uses. Construction of the project would not be located within 500 feet of residences but would be located within 200 feet of commercial land uses for a period of greater than 12 months.

Modification, placement, and operation of construction equipment are possible means for minimizing the impact on the existing sensitive receptors. Construction equipment should be well-maintained and used judiciously to be as quiet as possible. Additionally, construction activities for the proposed project should include the following mitigation measures to reduce noise from construction activities.

Mitigation Incorporated into the Project Design:

PD NOI-1: The project proposes to implement the following measures to reduce temporary construction noise to less than significant levels.

- Construction activities within 200 feet of commercial uses shall be limited to the hours between 7:00 AM and 7:00 PM, Monday through Friday.
- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines within 200 feet of commercial uses is strictly prohibited. Equipment shall be turned off when not in use and the maximum idling time shall be limited to five minutes.
- Locate stationary noise-generating equipment such as air compressors or portable power generators at least 200 feet from adjacent office and commercial uses to the greatest extent feasible.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Notify all adjacent business other noise-sensitive land uses of the construction schedule, in writing, and provide a written schedule of "noisy" construction activities to the adjacent land uses.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g. bad muffler, etc) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number

for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

For comparison to the 2017 MND, the table below shows the calculated construction noise for each phase of construction at various distances.

Table 4.15-7: Calculated Construction Noise Levels for Each Phase of Construction (2017 MND)

Construction Phase	At Distance of 100 ft.	
	L_{eq}, dBA	L_{max}, dBA
Trenching/Grading (20 days)	76	78
Building Exterior (230 days)	77	77
Building Interior (20 days)	69	72
Paving (20 days)	75	75

Source: Illingworth & Rodkin, 2016.

Implementation of the above measures would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures, and recognizing that noise generated by construction activities would occur over a temporary period, the temporary increase in ambient noise levels would be a less than significant impact. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

Operation-Related Noise

Section 20.50.300 of the City's Municipal Code establishes noise level performance standards for sources of noise originating from land zoned for industrial use. Noise levels are not to exceed 55 dBA at property lines shared with property used or zoned for residential purposes, 60 dBA at property lines shared with property used or zoned for commercial purposes, or 70 dBA at property lines shared with property used or zoned for industrial or use other than commercial or residential purposes. The City's Municipal Code would only be applicable to the testing of the generators and not to the operation of emergency generators necessary to provide services during an emergency.

The proposed project would include 36 3.25-MW diesel-fueled generators and three 0.5 MW diesel-fueled house generators, located within generator yards adjacent to the north and south sides of each building. Each generator would be enclosed and tested only during daytime hours. Under full load, each three MW generator would meet a design goal of 75 dBA at a distance of 23 feet. Generator yards would be surrounded by on all sides by screening walls. Heating, ventilation, and air conditioning (HVAC) equipment including four chiller plant modules, 12 condenser units, four make up air units, and one supply/exhaust fan would be located on the rooftops of each of the data center buildings and surrounded by screening walls. Noise data provided for the chiller plant modules indicated a sound power level of 99 dBA. Other mechanical and electrical equipment located inside the buildings would not be anticipated to emit audible noise outside.

Proposed fixed sources of noise at the site were modeled using SoundPLAN, a three-dimensional noise modeling software that considers site geometry, the characteristics of the noise sources, and shielding from structures and barriers. Two scenarios for noise exposure were considered for this project: noise from continuously operating HVAC equipment, and noise from HVAC equipment concurrent with running of all generators simultaneously. Although SV1 will limit running one engine at a time for maintenance and testing, for conservative screening purposes a scenario was analyzed assuming all generators would be tested simultaneously. Results of the two scenarios are summarized in Table 4.15-7 below. The second scenario, indicating the worst-case scenario situation, is provided as a noise exposure map in Figure 4.15-2. Land uses are also identified in Figure 4.15-2.

Table 4.15-8: Calculated Noise Levels Resulting from Mechanical Equipment Operations		
Receiver Location	**Calculated Noise Levels, dBA L_{eq}**	
	HVAC Only	**HVAC and Generator Testing**
Residential Property Line to the South along Santa Teresa Boulevard	37 – 42	42 – 50
Kaiser Permanente Medical Facility	44 – 46	55 – 58
Office, Commercial, and Light Industrial Uses to the West	41 – 44	50 – 53
Office, Commercial, and Light Industrial Uses to the East	41 – 45	50 – 55
Office, Commercial, and Light Industrial Uses to the North	38 – 46	47 – 58

As seen in Table 4.15-7 and Figure 4.15-2, noise resulting from continuous operation of HVAC equipment and simultaneous testing of all generators under full load is not anticipated to exceed the residential limits of 55 dBA L_{eq} at the nearest residential property line to the south. The commercial limit of 60 dBA L_{eq} is not anticipated to be exceeded at any of the surrounding uses, including the Kaiser Permanente medical facility to the north. The industrial limit of 70 dBA L_{eq} is not anticipated to be exceeded at any surrounding use. Noise levels resulting from on-site operations are not anticipated to have the potential to exceed noise level standards in the vicinity.

The generator testing plan indicated a worst-case scenario of a maximum of eight hours of testing per generator under full load during the commissioning phase and during periods of switchgear maintenance occurring once every four years. Generator testing during other periods of project operations would occur for much shorter time periods. A day-night average noise level of 46 to 51 dBA DNL at the nearest residences was calculated resulting from all generators operating simultaneously for 8-hours per day. This is well below the existing ambient noise level, which was measured to be 65 dBA DNL. Although the proposed project would be noisier than what was approved for the 2017 MN, on-site operations would not result in a significant increase in ambient noise at the nearest residences because noise levels would not exceed the local or state established standards. Therefore, this conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

NOISE EXPOSURE RESULTING FROM HVAC EQUIPMENT AND GENERATOR TESTING | FIGURE 4.15-2

Impact NOI-2: The project would not result in generation of excessive groundborne vibration or groundborne noise levels. **(Less than Significant Impact)**

Construction of the project is anticipated to take place between the fourth quarter of 2020 and the fourth quarter of 2027, with breaks in construction occurring between completion of each data center. A significant impact would be identified if the construction of the project would generate groundborne vibration levels at adjacent structures exceeding 0.2 in/sec PPV, as these levels would have the potential to result in "architectural" damage to normal buildings. The vibration limits contained in this policy are conservative and designed to provide the ultimate level of protection for existing buildings in San José.

Project construction activities, such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity of the work area. Impact or vibratory pile driving is not proposed as a method of construction. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Table 4.15-9 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet, and calculated vibrations levels that could be expected at distances of 100 and 150 feet, representative of the distances from the site to the nearest structures.

Table 4.15-9: Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)	PPV at 100 feet (in/sec)	PPV at 150 feet (in/sec)
Clam shovel drop		0.202	0.094	0.028
Hydromill (slurry wall)	In soil	0.002	0.008	0.001
	In rock	0.004	0.017	0.002
Vibratory Roller		0.210	0.098	0.029
Hoe Ram		0.089	0.042	0.012
Large bulldozer		0.089	0.042	0.012
Caisson drilling		0.089	0.042	0.012
Loaded trucks		0.076	0.035	0.011
Jackhammer		0.035	0.016	0.005
Small bulldozer		0.003	0.001	0.000

The closest existing structures to the project site are industrial park buildings located about 100 feet northeast of the site across Via Del Oro. Industrial park structures are also located about 150 feet to the northwest across San Ignacio Avenue and 200 feet to the east across Great Oaks Boulevard. Residences are located about 700 feet southwest of the site.

Based on the levels shown in Table 4.15-8 above, vibration would not exceed the 0.2 inches per second PPV limit at any structures in the site vicinity. Therefore, this is 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. **(No Impact)**

Norman Y. Mineta International Airport is located approximately 11 miles northwest of the project site. The project site is located outside of the 2027 noise contours shown in the Norman Y. Mineta International Airport Maser Plan Update Project Report. The site would not be exposed to excessive aircraft noise. **(No Impact)**

4.16 POPULATION AND HOUSING

4.16.1 Environmental Setting

4.16.1.1 *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.[49] The City of San José Housing Element and related land use policies were last updated in January 2015.[50]

Regional and Local

Plan Bay Area 2040

Plan Bay Area 2040 is a long-range transportation, land-use, and housing plan intended support a growing economy, provide more housing and transportation choices, and reduce transportation-related pollution and GHG emissions in the Bay Area. Plan Bay Area 2040 promotes compact, mixed-use residential and commercial neighborhoods near transit, particularly within identified Priority Development Areas (PDAs).[51]

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).

[49] California Department of Housing and Community Development. "Regional Housing Needs Allocation and Housing Elements." Accessed December 17, 2019. http://hcd.ca.gov/community-development/housing-element/index.shtml.
[50] City of San José. *City of San José 2014-2023 Housing Element*. January 27, 2015.
[51] Association of Bay Area Governments and Metropolitan Transportation Commission. "Project Mapper." http://projectmapper.planbayarea.org/.

4.16.1.2 *Existing Conditions*

The population of San José was estimated to be approximately 1,051,316 in January 2018 with an average of 3.20 persons per household.[52] The City currently has approximately 335,164 housing units and, by 2040, the City's population is projected to reach 1,445,000 with 472,000 households.[53] There are no housing units on the project site and it is in a developed area with infrastructure and roads.

4.16.2 Impact Discussion

	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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The modifications to the project do not affect population and housing impacts as described in the 2017 MND.

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 construct three data center buildings encompassing a total of 547,050 square feet. The GOSDC is anticipated to require a total of 42 employees (14 per building). The GOSBGF 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 and would, therefore, result in a less than significant population and housing

[52] State of California, Department of Finance. "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2018." Accessed December 12, 2019. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.
[53] Center for the Continuing Study of the California Economy. "Projections of Jobs, Populations, and Households for the City of San José." August 2008.

impacts. This conclusion is consistent with the findings of the 2017 MND. **(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. This conclusion is consistent with the findings of the 2017 MND. **(No Impact)**

4.17 PUBLIC SERVICES

4.17.1 Environmental Setting

4.17.1.1 *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.

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts from planned development in the City. The policies below are specific to public services and are applicable to the proposed project.

Envision San José 2040 Relevant Hazards Policies

Policy	Description
ES-3.1	Provide rapid and timely Level of Service response time to all emergencies: 1. For police protection, achieve a response time of six minutes or less for 60 percent of all Priority 1 calls, and of eleven minutes or less for 60 percent of all Priority 2 calls. 2. For fire protection, achieve a total response time (reflex) of eight minutes and a total travel time of four minutes for 80 percent of emergency incidents. 3. Enhance service delivery through the adoption and effective use of innovative, emerging techniques, technologies and operating models. 4. Measure service delivery to identify the degree to which services are meeting the needs of San José's community. 5. Ensure that development of police and fire service facilities and delivery of services keeps pace with development and growth in the city.
ES-3.9	Implement urban design techniques that promote public and property safety in new development through safe, durable construction and publicly-visible and accessible spaces.

4.17.1.2 *Existing Conditions*

Fire Service

Fire protection in the project area is provided by the San José Fire Department (SJFD). The SJFD responds to all fires, hazardous materials spills, and medical emergencies in the City. The nearest fire station to the project site is Station 27, located at 6027 San Ignacio Avenue, approximately one mile east of the project site.

Police Service

Police protection is provided by the City of San José Police Department (SJPD). Officers patrolling the project area are dispatched from police headquarters, located at 201 West Mission Street, 12.7 miles northwest of the project site. The City has four patrol divisions and 16 patrol districts. Patrols are dispatched from police headquarters and the patrol districts consist of 83 patrol beats, which include 357 patrol beat building blocks.

Schools

The project site is located in the Oak Grove School District and the East Side Union High School District. Oak Grove School District is comprised of 16 elementary schools and three intermediate (middle) schools. East Side Union High School District is comprised of 11 high schools.

The closest schools to the project site are Stratford Preschool (0.8 miles southwest of the site), Baldwin Elementary School (one mile southwest), Bernal Intermediate School (one mile southwest), and Martin Murphy Middle School (1.5 miles southeast).

Parks

The City of San José manages a total of 3,534 acres of regional and neighborhoods/community serving parkland.[54] Other recreational facilities within the City include community centers, senior centers, youth centers, skate parks, and trails. Nearby parks include Doctor George Page Park, located approximately 0.9 miles west of the project site, and Los Paseos Park, located approximately 1.1 miles southeast of the project site.

Libraries

The San José Public Library System consists of one main library and 18 open branch libraries. The libraries nearest the project site include the Edenvale Library located, Pearl Avenue Library, and Santa Teresa Library. The main library branch is the Martin Luther King Jr. Library, located at 150 E. San Fernando Street in Downtown San José.

4.17.2 Impact Discussion

	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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The modifications to the project do not affect public service impacts as described in the 2017 MND.

[54] Only existing parks are included in the above acreage. Secured or potential parks, which total approximately 118 acres, are not included in the acreage total. Source: City of San José. *Greenprint 2017 Update for Parks, Recreation Facilities and Trails*. June 2017.

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 SJFD. 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. However, the project is consistent with the project site's General Plan land use designation and is assumed under build out of the General Plan.

Furthermore, the project would be constructed in conformance with current building and fire codes, and the SJFD would review project plans to ensure appropriate safety measures 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 impacts) in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services. This conclusion is consistent with the findings of the 2017 MND. **(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 SJPD. The GOSDC may result in an incremental increase in the need for police services associated with increased building area 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. This conclusion is consistent with the findings of the 2017 MND. **(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 would, therefore, not require new or expanded school facilities, the construction of which could cause environmental impacts. This conclusion is consistent with the findings of the 2017 MND. **(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. **(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 GOSDC 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. This conclusion is consistent with the findings of the 2017 MND. **(No 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 GOSDC employees at the project site may visit public facilities such as libraries; however, this would not create the need for any new facilities or adversely impact the physical condition of existing facilities. This conclusion is consistent with the findings of the 201 MND. **(No Impact)**

4.18 RECREATION

4.18.1 Environmental Setting

4.18.1.1 *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.

4.18.1.2 *Existing Conditions*

The project site is located in South San José. As described in Section 4.17 Public Services, the City of San José manages a total of 3,534 acres of regional and neighborhood/community serving parkland, including community centers, senior centers, youth centers, skate parks, and trails.

4.18.2 Impact Discussion

	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 GOSBGF and the GOSDC, 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 “GOSBGF” or the “GOSDC”.

The modifications to the project do not affect recreation impacts as described in the 2017 MND.

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. **(No Impact)**

The proposed project would not increase employment substantially. Some GOSDC 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. This conclusion is consistent with the findings of the 2017 MND. **(No 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. **(No Impact)**

The proposed project would not include recreational facilities. Some GOSDC employees may use nearby parks and recreational facilities; however, this would not require the construction or expansion of recreational facilities. This conclusion is consistent with the findings of the 2017 MND. **(No Impact)**

4.19 TRANSPORTATION/TRAFFIC

4.19.1 Environmental Setting

4.19.1.1 *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.

SB 743 did not authorize OPR to set specific VMT impact thresholds, but it did direct OPR to develop guidelines for jurisdictions to utilize. CEQA Guidelines Section 15064.3(b)(1) describes factors that might indicate whether a development project's VMT may be significant.

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.

Transportation Analysis Policy (City Council Policy 5-1)

As established in City Council Policy 5-1, Transportation Analysis Policy (2018), the City of San José uses VMT as the metric to assess transportation impacts from new development. According to the policy, an employment (e.g., office or research and development) or residential project's transportation impact would be less than significant if the project VMT is 15 percent or more below the existing average regional per capita VMT. For industrial projects (e.g., warehouse, manufacturing, distribution), the impact would be less than significant if the project VMT is equal to or less than existing average regional per capita VMT. Screening criteria have been established to determine which projects require a detailed VMT analysis. If a project meets the relevant screening criteria, it is considered to a have a less than significant VMT impact.

If a project's VMT does not meet the established thresholds, mitigation measures would be required, where feasible. The policy also requires preparation of a Local Transportation Analysis to analyze non-CEQA transportation issues, including local transportation operations, intersection level of service, site access and circulation, and neighborhood transportation issues such as pedestrian and bicycle access and recommend transportation improvements. The VMT policy does not negate Area Development policies and Transportation Development policies approved prior to adoption of Policy 5-1. Policy 5-1 does, however, negate the City's Protected Intersection policy as defined in Policy 5-3.

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to transportation and are applicable to the proposed project.

Envision San José 2040 Relevant Transportation Policies

Policy	Description
TR-1.1	Accommodate and encourage use of non-automobile transportation modes to achieve San José's mobility goals and reduce vehicle trip generation and vehicle miles traveled (VMT).
TR-1.2	Consider impacts on overall mobility and all travel modes when evaluating transportation impacts of new developments or infrastructure projects.
TR-1.4	Through the entitlement process for new development, fund needed transportation improvements for all transportation modes, giving first consideration to improvement of bicycling, walking and transit facilities. Encourage investments that reduce vehicle travel demand.
TR-1.5	Design, construct, operate, and maintain public streets to enable safe, comfortable, and attractive access and travel for motorists and for pedestrians, bicyclists, and transit users of all ages, abilities, and preferences.
TR-2.8	Require new development where feasible to provide on-site facilities such as bicycle storage and showers, provide connections to existing and planned facilities, dedicate land to expand existing facilities or provide new facilities such as sidewalks and/or bicycle lanes/paths, or share in the cost of improvements.

Policy	Description
TR-3.3	As part of the development review process, require that new development along existing and planned transit facilities consist of land use and development types and intensities that contribute towards transit ridership. In addition, require that new development is designed to accommodate and to provide direct access to transit facilities.
TR-5.3	The minimum overall roadway performance during peak travel periods should be level of service "D" except for designated areas and specified exceptions identified in the General Plan including the Downtown Core Area. Mitigation measures for vehicular traffic should not compromise or minimize community livability by removing mature street trees, significantly reducing front or side yards, or creating other adverse neighborhood impacts.
TR-8.4	Discourage, as part of the entitlement process, the provision of parking spaces significantly above the number of spaces required by code for a given use.
TR-9.1	Enhance, expand and maintain facilities for walking and bicycling, particularly to connect with and ensure access to transit and to provide a safe and complete alternative transportation network that facilitates non-automobile trips.

4.19.1.2 *Existing Conditions*

Roadway Network

Regional Access

U.S. Highway 101 (US 101) is a north-south freeway that extends northward through San Francisco and southward through Gilroy. Within the study area, US 101 is an eight-lane facility that includes two high-occupancy vehicle (HOV) lanes. US 101 provides access the project site via the Bernal Road interchange.

State Route 85 (SR 85) is a six-lane highway that is oriented in an east-west direction in the vicinity of the project site. It extends from Mountain View to south San José, terminating at US 101. SR 85 provides access to the project sites via the Bernal Road interchange.

Local Access

Great Oaks Boulevard is a two- to four-lane divided arterial. Great Oaks Boulevard intersects Via Del Oro and Santa Teresa Boulevard, and provides direct access to the project site.

Via Del Oro is a two-lane roadway with a two-way center left-turn lane. Via Del Oro intersects San Ignacio Avenue and Great Oaks Boulevard, and provides direct access to the project site.

San Ignacio Avenue is a two-lane roadway with a two-way center left-turn lane. San Ignacio Avenue intersects Santa Teresa Boulevard and Via Del Oro, and provides direct access to the project site.

Pedestrian and Bicycle Facilities

Pedestrian facilities in the area consist of sidewalks and crosswalks. Crosswalks with pedestrian signal heads and American Disabilities Act (ADA) compliant ramps are located at all nearby signalized intersections. Bicycle facilities in the area are limited to Class II bicycle lanes on Santa Teresa Boulevard.

Transit Service

Transit service to the project area is provided by the Santa Clara Valley Transportation Agency (VTA). The Santa Teresa Light Rail Station is served by bus Routes 42, 68, 102, 122, and 182. Light rail lines 901 and 911 also stop at this station. Bus Route 42 stops at the intersection of San Ignacio Avenue and Via Del Oro, and Route 68 stops along Santa Teresa Boulevard.

Commuter rail service operated by Caltrain offers service from San Francisco in the north to Gilroy in the south. The Blossom Hill Caltrain station is located approximately 2.3 miles northwest of the project sites.

Site Access

The project site is currently undeveloped; there is no parking located on-site. Pedestrians can access the site via intersection crosswalks and sidewalks along the site's frontages on San Ignacio Avenue, Via Del Oro, and Great Oaks Boulevard. There are two existing curb cutouts along Via Del Oro for vehicles to access the site.

4.19.2 Impact Discussion

	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?	☐	☐	☒	☐
2) 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?	☐	☐	☒	☐

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)**

The project proposes to construct three data center buildings, 266 surface parking spaces, and 21 bicycle parking spaces. Each data center building would be 182,350 square feet in size; three data centers would total 547,050 square feet.

Construction Vehicle Trips

All construction-related trips would be temporary in nature and would cease at the completion of construction activities. Trip generation would vary by construction phase. The GOSDC buildings would be constructed in three separate phases. One building would be constructed per phase, with construction over an approximately 13 to 15-month period per phase. The average construction workforce is estimated to be 138, with a peak estimated to be 225 for each phase. An accepted methodology to estimate construction worker trips is to use daily trip rates for employees at a general light industrial facility and apply those rates to the anticipated number of construction workers. The Institute of Transportation Engineers (ITE) Trip Generation Manual, Tenth Edition's trip generation rate for general light industrial land uses (land use code 110) is 3.05 daily one-way trips per employee. Table 4.19-1 below shows the trip generation construction trip totals for both average workforce and peak workforce.

Table 4.19-1: Trip Generation During Construction

Methodology	Size	Weekday		AM Peak Hour		PM Peak Hour	
		Rate	Trips	Rate	Total	Rate	Total
General Light Industrial (ITE Land Use Code 110)	138 workers (average)	3.05	421	.67	93	.68	94
General Light Industrial (ITE Land Use Code 110)	225 workers (peak)	3.05	686	.67	151	.68	153

According to the City of San José and VTA Transportation Impact Analysis Guidelines, a Transportation Impact Analysis (TIA) is needed when a project generates 100 or more net new peak hour trips in either the AM or PM peak hour. As shown in Table 4.19-1 above, construction of the project could generate a total of 153 peak hour trips, which exceeds the threshold for a TIA. However, due to the temporary nature of construction generated trips, construction of the data center buildings is not anticipated to adversely impact nearby intersections. For these reasons, construction of the project would not lead to a significant impact. **(Less than Significant Impact)**

Operational Vehicle Trips

The GOSBGF 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 GOSDC is anticipated to require a total of 42 employees, along with an estimated 30 visitors per day. The ITE Trip Generation Manual, Tenth Edition, was used to estimate vehicle trips for the

project. For comparison, the project was analyzed under two ITE land use codes: data center, which is based on project size, and general light industrial, which is based on number of employees.

Based on ITE trip generation rates for general light industrial land uses (land use code 110), the GOSDC would generate 220 daily one-way trips, or 440 daily round trips for GOSDC employees and visitors. Based on ITE trip generation rates for data centers (land use code 160), which relies on actual survey data, a data center equivalent in size to the proposed GOSDC could generate an estimated total of 543 daily trips, with 82 occurring during the AM peak hour and 71 occurring during the PM peak hour. Table 4.19-2 below shows a comparison of the weekday and peak hour trips from both land use codes.

Table 4.19-2: Trip Generation During Operation

Methodology	Size	Weekday		AM Peak Hour		PM Peak Hour	
		Rate	Trips	Rate	Total	Rate	Total
Data Center (ITE Land Use Code 160)	547 ksf	0.99	543	0.15	82	0.13	71
General Light Industrial (ITE Land Use Code 110)	72 persons (42 employees and 30 visitors)	3.05	220	.67	48	.68	49

The need for the preparation of a traffic impact analysis for a particular development is based on its estimated trip generation and its effect on surrounding transportation facilities. According to the City of San José and VTA Transportation Impact Analysis Guidelines, a Transportation Impact Analysis is needed when a project generates 100 or more net new peak hour trips in either the AM or PM peak hour. As shown in Table 4.19-2, the project would generate less than 100 net new peak hour trips in either the AM or PM peak hour, under either ITE land use. Due to the low number of actual estimated project generated trips, operation of the data center buildings is not anticipated to adversely impact nearby intersections. This conclusion is consistent with the findings of the 2017 MND. **(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)**

The CEQA Guidelines Section 15064.3, Subdivision (b)(1) states that land use projects with vehicle miles traveled (VMT) exceeding an applicable threshold of significance may indicate a significant impact. The GOSBGF would not regularly generate VMT other than occasional trips associated with maintenance activity. The operation of the GOSDC would require relatively few VMT. Compared to existing conditions, the GOSDC is expected to result in a net increase in VMT per capita on the site. The GOSDC is not a growth-inducing project that will 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)**

As discussed in the 2017 MND, vehicular access to the project site would be provided via a main entrance on Great Oaks Boulevard, and a secondary entrance on San Ignacio Avenue. A service entrance for trucks would be located mid-block on Via Del Oro. Separate entrances for passenger vehicles and trucks are provided in order to keep the two types of traffic segregated within the project site. Each entrance would be gated and electronically secured. Construction of the project would not result in an increased traffic hazard due to the project's design. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

Impact TRN-4:	The project would not result in inadequate emergency access. **(Less than Significant Impact)**

As stated in the 2017 MND, a fire access lane is proposed along the southern property boundary of the site to provide site access for emergency vehicles. The fire access lane would have a minimum turning radius of 30 feet and an outside turning radius of 50 feet, and would be designed and maintained to support the loads of fire apparatus of at least 75,000 pounds. Construction of the project would be consistent with regulatory requirements for emergency access. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

4.20 UTILITIES AND SERVICE SYSTEMS

4.20.1 Environmental Setting

4.20.1.1 *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 Great Oaks Water Company adopted its most recent UWMP in 2015.

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.

California Green Building Standards Code

In January 2010, the State of California adopted the California Green Building Standards Code that establishes mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a

mandatory set of guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels:

- Reducing indoor water use by 20 percent;
- Reducing wastewater by 20 percent;
- Recycling and/or salvaging 50 percent of nonhazardous construction and demolition debris; and
- Providing readily accessible areas for recycling by occupant.

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The following policies are specific to utilities and service systems and are applicable to the proposed project.

Envision San José 2040 Relevant Utilities and Service Systems Policies

Policy	Description
MS-3.1	Require water-efficient landscaping, which conforms to the State's Model Water Efficient Landscape Ordinance, for all new commercial, institutional, industrial, and developer-installed residential development unless for recreation needs or other area functions.
MS-3.2	Promote use of green building technology or techniques that can help to reduce the depletion of the City's potable water supply as building codes permit.
MS-3.3	Promote the use of drought tolerant plants and landscaping materials for nonresidential and residential uses.
IN-3.3	Meet the water supply, sanitary sewer and storm drainage level of service objectives through an orderly process of ensuring that, before development occurs, there is adequate capacity. Coordinate with water and sewer providers to prioritize service needs for approved affordable housing projects.
IN-3.5	Require development which will have the potential to reduce downstream LOS to lower than "D", or development which would be served by downstream lines already operating at a LOS lower than "D", to provide mitigation measures to improve the LOS to "D" or better, either acting independently or jointly with other developments in the same area or in coordination with the City's Sanitary Sewer Capital Improvement Program.
IN-3.7	Design new projects to minimize potential damage due to stormwaters and flooding to the site and other properties.
IN-3.9	Require developers to prepare drainage plans that define needed drainage improvements for proposed developments per City standards.
IN-3.10	Incorporate appropriate stormwater treatment measures in development projects to achieve stormwater quality and quantity standards and objectives in compliance with the City's National Pollutant Discharge Elimination System (NPDES) permit.

San José Zero Waste Strategic Plan/Green Vision

The Green Vision provides a comprehensive approach to achieve sustainability through new technology and innovation. The Zero Waste Strategic Plan outlines policies to help the City of San José foster a healthier community and achieve its Green Vision goals, including 75 percent diversion by 2013 and zero waste by 2022. The Green Vision also includes ambitious goals for economic growth, environmental sustainability and an enhanced quality of life for San José residents and businesses.

Private Sector Green Building Policy

The City of San José's Green Building Policy for private sector new construction encourages building owners, architects, developers, and contractors to incorporate meaningful sustainable building goals early in building design process. This policy establishes baseline green building standards for private sector new construction and provides a framework for the implementation of these standards. It is also intended to enhance the public health, safety and welfare of San José residents, workers, and visitors by fostering practices in the design, construction, and maintenance of buildings that will minimize the use and waste of energy, water and other resources in the City of San José. Since the proposed commercial/industrial project would be greater than 25,000 square feet, the proposed project would be required to achieve LEED Silver certification, at minimum.[55]

4.20.1.2 *Existing Conditions*

Water Service and Supply

Water service to the project site is supplied by the Great Oaks Water Company, which serves over 20,000 customers over an approximately 14 square mile area. Existing water facilities in the project area include a 12-inch water main in Great Oaks Boulevard and a 12-inch main in Via Del Oro. The project site is currently undeveloped and therefore, no water is currently being used on-site.

Wastewater/Sanitary Sewer System

Wastewater treatment service for the project area is provided by the City of San José through the San José-Santa Clara Regional Wastewater Facility (RWF). The RWF is located in Alviso and serves over 1,500,000 people in San José, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno. Sanitary sewer lines in the project area are owned and maintained by the City of San José. There is a 15-inch sewer line in San Ignacio Avenue, a 15-inch sewer line in Great Oaks Boulevard, and an eight-inch sewer line in Via Del Oro. The project site currently does not generate sewage.

Storm Drainage

As discussed in Section 4.12 Hydrology and Water Quality, the project site is located within the Guadalupe Watershed. Stormwater runoff from the project area drains into Canoas Creek and flows

[55] City of San José. *Private Sector Green Building*. Accessed December 24, 2019. Available at: https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/energy/green-building/private-sector-green-building.

in a northerly direction to the San Francisco Bay. The project site is undeveloped and is currently entirely pervious. Storm drain lines serving the project area include a 48-inch storm main in San Ignacio Avenue, a 24-inch storm main in Via Del Oro, and a 48-inch storm main in Great Oaks Boulevard.

Solid Waste

Santa Clara County's Integrated Waste Management Plan (IWMP) was approved by the California Integrated Waste Management Board (CIWMB) in 1996 and was reviewed in 2004 and 2007. Each jurisdiction in the county has a diversion requirement of 50 percent for 2000 and each year thereafter. According to the IWMP, the County has adequate disposal capacity beyond 2022. The total permitted landfill capacity of the five operating landfills in the City is approximately 5.3 million tons per year. In October 2007, the San José City Council adopted a Zero Waste Resolution which set a goal of 75 percent waste diversion by 2013 and zero waste by 2022.

4.20.2 Impact Discussion

	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 GOSBGF and the GOSDC, 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 "GOSBGF" or the "GOSDC".

The modification to the project that could affect utilities impacts, compared to the 2017 MND, is an increase in water demand from 139,680 gpd to 1,169,650 gpd. This difference is explained in further detail below.

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 GOSBGF would not require expansion of any utility facilities. The GOSDC would connect to existing water, stormwater, electric, telecommunications, and waste systems adjacent to the site. The GOSDC would incrementally increase the demand on existing facilities in the City of San José. No relocation of existing or construction of new facilities for these systems are needed to serve the GOSDC. Additionally, PG&E owns natural gas distribution facilities within the City of San José. The GOSDC would not require more natural gas than was assumed in the 2017 MND nor would it require the construction of any additional off-site facilities. Therefore, there would not be a significant impact, and this conclusion is consistent with the findings of the 2017 MND. **(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 project proposes to construct three data center buildings, consistent with the site's General Plan land use designations and planned growth under the General Plan. The project shall comply with CalGreen and the City's Private Sector Green Building Policy. Per the City's Private Sector Green Building Policy, the proposed GOSDC buildings are required to achieve LEED Silver certification, at minimum, by incorporating a variety of design features, including water conservation measures such as planting drought tolerant landscaping.

The GOSBGF would not use any water for maintenance, testing or emergency operations. However, it is estimated that the GOSDC would require a maximum daily water demand of 1,169,650 gallons per day (gpd).[56] The majority of the water is in the water-cooled chilled water-cooling plant that uses evaporative heat rejection. This is an increase in water demand as compared to the previously approved project in the 2017 MND, which estimated a water demand of 139,680 gpd.

Title 24 prohibits air-cooled chiller plants larger than 300 tons. Since each building would be equipped with approximately 11,000 tons of cooling, the project would use water-cooled chiller water plants with evaporative heat rejection. Compared to the 2017 MND, the proposed project's

[56] Southland Industries. Estimated Full Load Water Usage & Drainage for GOS Project. December 20, 2019.

power density has increased by approximately 83%. The proposed project does not have enough physical space for the IDEC units that were proposed in the 2017 MND. The IDEC units require less water consumption than does the water-cooled chilled water plant. For these reasons, the proposed project has a higher water demand than what was estimated in the 2017 MND.

As described in Section 2.3.2.8, the site is within the jurisdiction and service territory of the Great Oaks Water Company and will supply the GOSDC with water. SV1 met with the South Bay Water Recycling Program (SBWRP) who explained that the Great Oaks Water Company would have to join its program in order for the SBWRP to serve recycled water to the site. SV1 met with Great Oaks Water Company who explained that they have no plans to join the SBWRP Program and as a condition of it serving the site with potable water, no recycled water could be delivered to the site. Therefore, recycled water is not feasible for the GOSDC.

Great Oaks Water Company completed a Water Supply Questionnaire for the project, which is attached as Appendix I. The assessment concluded that the proposed development and the projected increase in water demand would be consistent with the available water supply. Therefore, there would be a less than significant impact, and the project would not have insufficient water supplies available to serve the project, despite the increase in demand from the 2017 MND. This conclusion is consistent with the findings of the 2017 MND. **(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 project is estimated to generate a maximum of approximately 243,317 gallons per day (gpd) of wastewater sewage.[57] Given the City's existing remaining capacity at the RWF (38.8 mgd), there is sufficient capacity at the RWF to accommodate project flows. Moreover, the General Plan FEIR concludes that the sewage generated by the buildout of the General Plan would not exceed the City's allocated capacity at the RWF. A significant portion of the water used by the cooling plant is evaporated into the air and does not drain to the wastewater system.

As discussed in Section 4.12 Hydrology and Water Quality, construction of the proposed project would increase the amount of impervious surfaces in the project area. The project would, however, be required to comply with the City's Grading Policy, the City's Urban Runoff Policy 6-29, and RWQCB's MRP NPDES Permit/C.3. requirements for the treatment of stormwater. In addition, the project includes bioswales and an underground retention basin for stormwater. For these reasons, implementation of the proposed project would have a less than significant impact on the City's storm drainage system. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

[57] Southland Industries. Estimated Full Load Water Usage & Drainage for GOS Project. December 20, 2019.

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)**

As discussed in the 2017 MND, the General Plan FEIR concluded that the increase in waste generated from buildout of the General Plan would not exceed the capacity of existing landfills that serve the City. Future increases in solid waste generation from development allowed under the General Plan would be minimized with ongoing implementation of the City's Zero Waste Strategic Plan. This Plan, in combination with existing regulations and programs, would ensure that the buildout of the General Plan would not result in significant impacts from the provision of landfill capacity to accommodate the City's increased service population.

The proposed GOSDC would intensify the uses on the site and increase the amount of solid waste to 156 tons per year[58], compared to the existing conditions (currently zero). However, the project is consistent with the development in the General Plan. Additionally, the project would comply with the City's Construction and Demolition Diversion Program during construction. This program ensures that at least 75 percent of construction waste generated by the project is recovered and diverted from landfills. The GOSBGF would generate minimal, if any, solid waste. For these reasons, the project would have a less than significant impact on solid waste disposal and landfill facilities. This conclusion is consistent with the findings of the 2017 MND. **(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. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact)**

[58] Atmospheric Dynamics. Equinix SV12 CalEEMod Analysis. February 2020.

4.21 WILDFIRE

4.21.1 Environmental Setting

The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.[59]

4.21.2 Impact Discussion

	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)**

[59] State of California Department of Forestry and Fire Protection. Santa Clara County Fire Hazard Severity Zones in SRA. Adopted November 7, 2007.

4.22 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. This conclusion is consistent with the findings of the 2017 MND.

The project is located in an urban area and is devoid of sensitive biological resources. 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. This conclusion is consistent with the findings of the 2017 MND.

There are no known historic, cultural, or tribal resources on or adjacent to the site. The project includes 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. This conclusion is consistent with the findings of the 2018 MND. **(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 San José 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 constitute a cumulatively considerable contribution to significant cumulative 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.

4.22.1 Energy

Energy impacts are cumulative in nature in that they are tied to local and regional energy supplies. Electricity for the proposed GOSDC would be provided by the Pacific Gas & Electric Company (PG&E). 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, implementation of energy efficiency measures described previously would ensure the project does not have a significant impact on energy use. The GOSBGF 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. This conclusion is consistent with the findings of the 2017 MND.

4.22.2 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 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 4.5 Air Quality, with the incorporation of mitigation measures into the project, 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 measures included in the project, the project would not result in a cumulative air quality impact. This conclusion is consistent with the findings of the 2017 MND.

4.22.3 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 4.10 Greenhouse Gas Emissions in terms of the project's GHG emissions. With implementation of the air quality mitigation measures and energy efficiency measures included in the project, the project would not exceed BAAQMD thresholds and would not conflict with plans, policies or regulation adopted for the purpose of reducing the emissions of GHGs. This conclusion is consistent with the findings of the 2017 MND.

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 air quality, hazardous materials and noise. With the implementation measures included in the project and described in the specific sections of this report, the proposed project would not result in substantial adverse effects on human beings, individually or cumulatively. This conclusion is consistent with the findings of the 2017 MND. **(Less than Significant Impact with Mitigation Incorporated into the Project Design)**

4.23 ENVIRONMENTAL JUSTICE

4.23.1 Environmental Setting

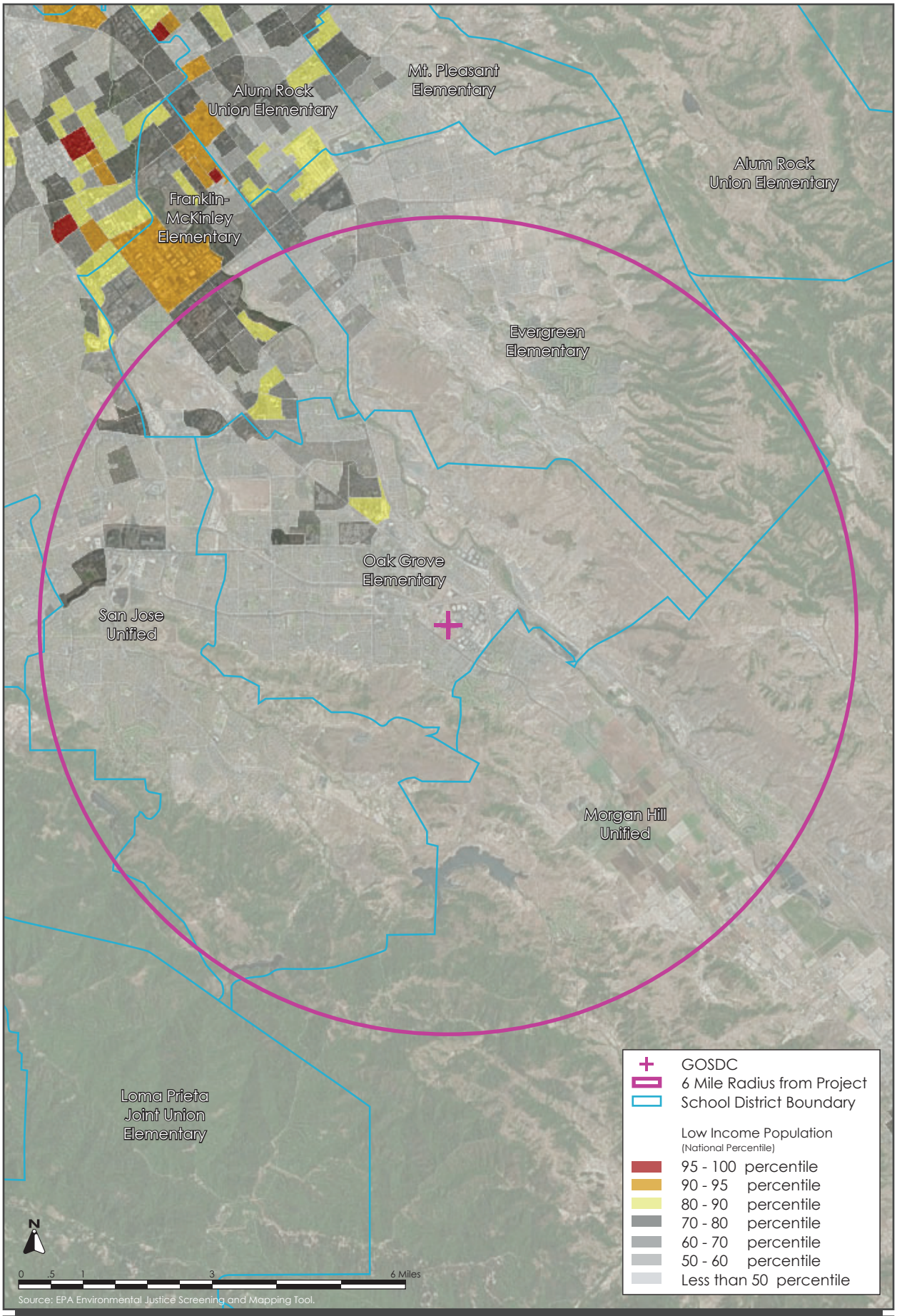
Based on California Department of Education data shown in Table 4.23-1 and depicted in Figure 4.23-1, the percentage of those living in the school districts of Evergreen Elementary, Franklin-McKinley Elementary, Oak Grove Elementary, Morgan Hill Unified School District, and San José Unified School District (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, and thus are considered an environmental justice (EJ) population based on a low income population as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

Table 4.23-1: Low Income Data within the Project Area

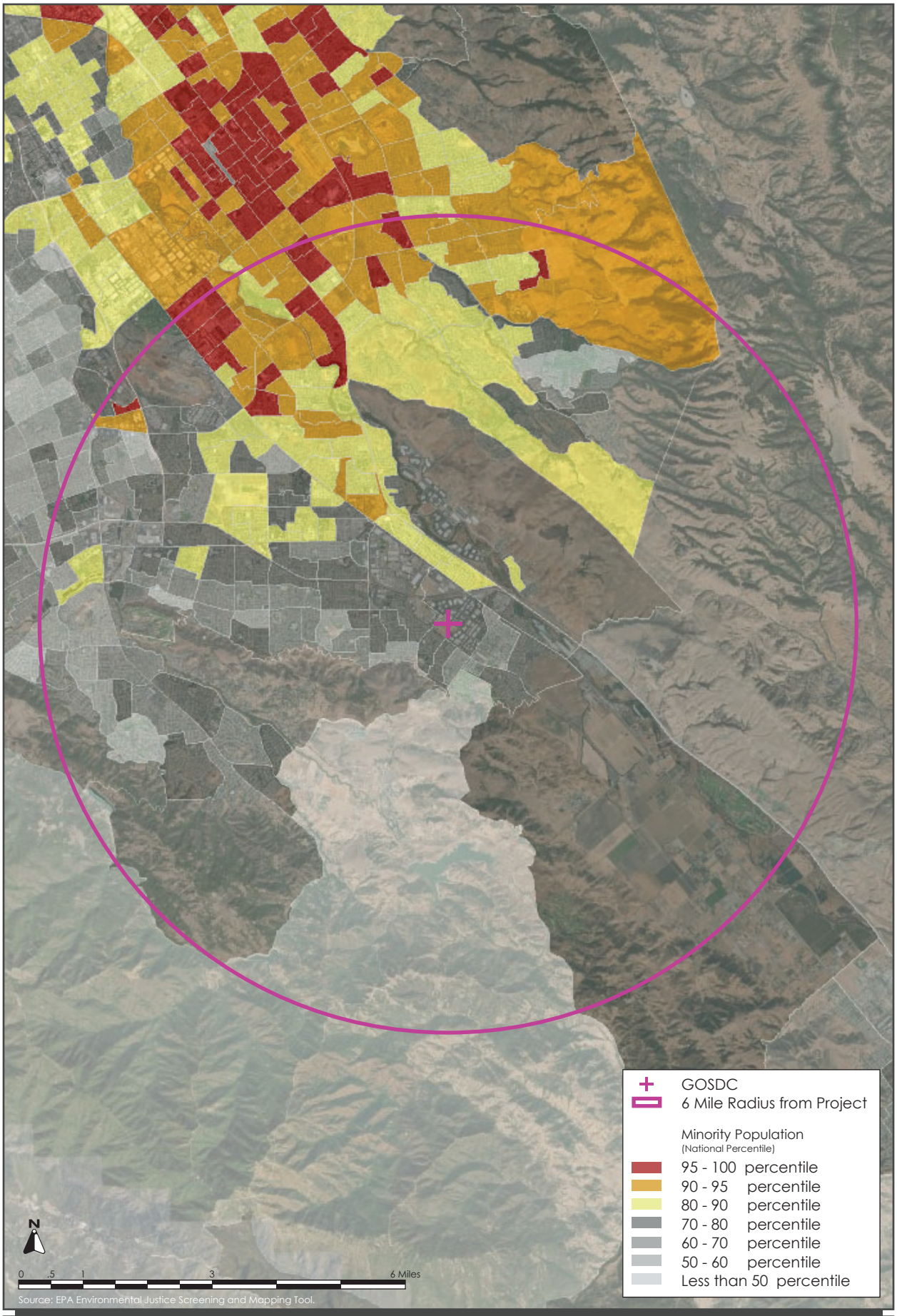
School Districts in Six Mile Radius	**Enrollment Used for Meals**	**Free or Reduced Price Meals**	
Evergreen Elementary	10,839	3,148	29%
Franklin-McKinley Elementary	10,275	7,573	73.7%
Oak Grove Elementary	10,720	4,339	40.5%
Morgan Hill Unified	8,945	3,159	35.3%
San Jose Unified	31,114	13,281	42.7%
Reference Geography			
Santa Clara County	272,155	102,647	37.7%

Source: California Department of Education, Data & Statistics, Free or Reduced Price Meals Data 2018-2019, https://www.cde.ca.gov/ds/sd/sd/filessp.asp.

Figure 4.23-2 shows 2010 census blocks in a six-mile radius of the 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 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 BY CENSUS BLOCKS WITHIN 6 MILES OF PROPOSED PROJECT | FIGURE 4.23-1



MINORITY POPULATION DISTRIBUTION BY CENSUS BLOCKS WITHIN 6 MILES OF PROPOSED PROJECT | FIGURE 4.23-2

4.23.2 Environmental Impacts

The following technical areas discuss impacts to EJ populations: Aesthetics, Air Quality, Cultural Resources, 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 4.23-1 and Figure 4.23-2, the project site is located within an area with a high-income population and a low minority population. However, as stated in the aesthetics section, the proposed buildings would be visually similar to the surrounding land uses which primarily include 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 San José'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 high minority populations.

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 Figures 4.23-1 and 4.23-2. 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 Figures 4.23-1 and 4.23-2.

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 GOSDC and GOSBGF would be less than significant with mitigation incorporated. Both construction and operational emissions from the project with mitigation incorporated 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 Figures 4.23-1 and 4.23-2.

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.

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. 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 significantly contribute 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, not expected to negatively impact water quality 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 San José General Plan land use designation and 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 Figures 4.23-1 and 4.23-2, the project site is within an area having a minimal EJ population.

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 San José Municipal Code. 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 (GOSDC and GOSBGF combined) would not exceed the City of San José'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 José, 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 levels of service 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.

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. Cumulative impacts would be less than significant for both the general population and the EJ population.

SECTION 5.0 ALTERNATIVES

5.1 EVALUATION CRITERIA

The overall objective of the GOSBGF was to provide the most reliable and flexible backup generating system to support GOSDC clients. Central to SV1's mission is to provide data centers that provide the highest quality uninterruptible power supply. With this overall objective, SV1 and its consultants conducted an alternative analysis and used the following criteria as a means of evaluating and ranking alternatives:

- **Commercial Availability and Feasibility.** The selected alternative must currently be in use and proven as an accepted industry standard for technology. It must be operational within a reasonable timeframe where permits and approvals are required.
- **Technical Feasibility.** The selected alternative must utilize technology systems that are compatible with one another.
- **Reliability.** The selected alternative must utilize technology that is reliable in the case of an emergency.
- **Industry Standard.** The selected alternative must be considered industry standard or best practice. The customers of SV1 are informed consumers and will request SV1 to provide a detailed description of the type of backup generation that it provides as part of the customer's due diligence. If the alternative does not meet the customer's requirements, they will not put their servers in the GOSDC.

As part of the development of the GOSDC and the GOSBGF, SV1 considered alternatives to the backup generators as proposed. As discussed more fully below, SV1 considered a smaller capacity system as well as alternative generating technologies. For completeness purposes, a discussion of the No Project Alternative is also included.

5.2 ALTERNATIVE 1: REDUCED CAPACITY SYSTEM

SV1 considered a backup generating system with fewer emergency generators. However, any generating capacity less than the total demand of the GOSDC at maximum occupancy, with redundancy, would not allow SV1 to provide the critical and reliable electricity needed during an emergency power outage. It is important to note that in addition to electricity that would be directly consumed by the servers themselves, the next largest electrical demand of the data center building would be related to cooling the server rooms. For the servers to reliably function, they must be kept within temperature tolerance ranges. The industry standard is to design and operate a building that can meet those ranges even during a loss of utility electric power. Therefore, for SV1 to provide the reliability required by its clients, it is necessary to provide a backup generating system that could meet the maximum load during full occupancy on the hottest design day and include redundancy as described in Section 2.2.4.1. A reduced capacity system would not fulfill the basic objectives of the GOSBGF.

5.3 ALTERNATIVE 2: ALTERNATIVE GENERATING TECHNOLOGIES

SV1 considered using three alternative technologies: gas-fired turbines, flywheels, and batteries. None of the three technologies considered could meet the overall project objective because they were commercially or technically infeasible and/or would not meet the necessary standard of reliability during an emergency.

5.3.1 Flywheels

Flywheel energy storage systems use electric energy input which is stored in the form of kinetic energy. Kinetic energy can be described as "energy of motion," in this case the motion of a spinning mass called a rotor. The rotor spins in a nearly frictionless enclosure. When short-term backup power is required because utility power fluctuates or is lost, the inertia allows the rotor to continue spinning and the resulting kinetic energy is converted to electricity. [60]

SV1 has concluded that flywheel technology would not be a viable option for the following reasons:

- Flywheel technology does not perform within the required reliability levels of SV1 and is prone to system failure.
- Flywheel technology requires an extensive amount of maintenance to keep each energy storage system functioning.
- Flywheel systems still require backup generation to maintain electrical load.

5.3.2 Gas-Fired Engines

SV1 considered using natural gas-fired engines instead of diesel generators to supply backup power for the GOSDC. This technology option was rejected because it is not technically feasible. The UPS systems described in Section 2.2.4.2 require backup generation that starts very quickly, and natural gas engines are too slow to start. Loss of natural gas delivery, such as broken pipe or loss of supply, would render the natural gas engines inoperable and unable to reliably provide backup electrical power in an emergency. Further, emergency conditions resulting in loss of power from SVP may also result in temporary loss of gas utility service. Therefore, natural gas engines are not considered reliable enough to meet the industry standard or needs of the GOSDC. Storage of sufficient natural gas on site to maintain emergency electricity to the GOSDC during an outage would not be tenable given the volume of natural gas that would be required. Finally, natural gas-fired engines are not considered industry standard for data centers.

5.3.3 Battery Storage

SV1 considered using batteries alone as a source of emergency backup power. The primary reason batteries alone were rejected by SV1 was the limited duration of battery power. Batteries can provide power quickly, which is the reason SV1 has incorporated them into the overall backup electrical system design. As described in Section 2.2.4.2, batteries would be initiated at the first sign of electricity interruption. However, the current state of battery technology does not allow for very long durations of discharge at building loads as high as planned for the GOSDC. Once the standalone

[60] Energy Storage Association. Accessed November 2019. Available at: http://energystorage.org/energy-storage/technologies/flywheels

batteries are completely discharged, the only way they can be recharged without onsite generation is if the utility electrical system is back up and running. Since it is not possible to predict the duration of an electricity outage batteries are not a viable option for emergency electrical power, and clients and their insurance companies would not consider batteries to provide the redundancy necessary. Therefore, because battery storage cannot provide the duration that may be necessary during an emergency, this technology option was rejected as technically and commercially infeasible.

5.4 NO PROJECT ALTERNATIVE

Consumer demand for data storage has grown substantially in recent years. The GOSDC, including the GOSBGF, is proposed in response to this heightened demand. The "No Project" Alternative would leave the GOSDC exposed to electricity outages. Simply put, SV1's clients would not locate their servers in the GOSDC without a highly reliable backup generating facility to support it. Therefore, the No Project Alternative is rejected as commercially infeasible and not consistent with industry standards.

SECTION 6.0 REFERENCES

The analysis in this Initial Study is based on the professional judgement and expertise of the environmental specialists preparing this document, based upon review of the site, surrounding conditions, site plans, and the following references:

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SECTION 7.0 AGENCY CONTACTS AND CONSULTANTS

7.1 AGENCY CONTACTS

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7.2 CONSULTANTS

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Julie Wright, Senior Project Manager
Maria Kisyova, Researcher
Zach Dill, Graphic Artist

Illingworth & Rodkin, Inc.
Acoustics Consultants
Dana Lodico, Senior Consultant
Steve Deines, Staff Consultant

SECTION 8.0 NOTIFICATION LIST

The following list of addresses of properties within 1,000 feet of the project site was provided for noticing purposes.

Address	City	State	Zip Code
201 Arbor Valley Court	San José	CA	95119
203 Arbor Valley Court	San José	CA	95119
201 Arequipa Court	San José	CA	95119
205 Arequipa Court	San José	CA	95119
206 Arequipa Court	San José	CA	95119
209 Arequipa Court	San José	CA	95119
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213 Bahia Court	San José	CA	95119
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222 Bahia Court	San José	CA	95119
6630 Cielito Way	San José	CA	95119
203 Colibri Court	San José	CA	95119
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207 Colibri Court	San José	CA	95119
208 Colibri Court	San José	CA	95119
211 Colibri Court	San José	CA	95119
212 Colibri Court	San José	CA	95119
216 Colibri Court	San José	CA	95119

Address	City	State	Zip Code
219 Colibri Court	San José	CA	95119
79 Great Oaks Boulevard	San José	CA	95119
80 Great Oaks Boulevard	San José	CA	95119
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90 Great Oaks Boulevard #101	San José	CA	95119
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90 Great Oaks Boulevard #104	San José	CA	95119
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90 Great Oaks Boulevard #201	San José	CA	95119
90 Great Oaks Boulevard #202	San José	CA	95119
90 Great Oaks Boulevard #203	San José	CA	95119
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100 Great Oaks Boulevard #140	San José	CA	95119
100 Great Oaks Boulevard #150	San José	CA	95119
100 Great Oaks Boulevard #101	San José	CA	95119
100 Great Oaks Boulevard #B	San José	CA	95119
100 Great Oaks Boulevard #130	San José	CA	95119
140 Great Oaks Boulevard	San José	CA	95119
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151 Martinvale Lane	San José	CA	95119
181 Martinvale Lane	San José	CA	95119
185 Martinvale Lane	San José	CA	95119
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6280 San Ignacio Avenue #D	San José	CA	95119
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6280 San Ignacio Avenue #F	San José	CA	95119
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6280 San Ignacio Avenue #K	San José	CA	95119
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6293 San Ignacio Avenue #E	San José	CA	95119
6293 San Ignacio Avenue #F	San José	CA	95119
6293 San Ignacio Avenue #G	San José	CA	95119
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202 Vineyard Drive	San José	CA	95119
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212 Vineyard Drive	San José	CA	95119
215 Vineyard Drive	San José	CA	95119

SECTION 9.0 ACRONYMS AND ABBREVIATIONS

AAQS	California Ambient Air Quality Standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACM	asbestos containing material
ATCM	Airborne Toxic Control Measures
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
bgs	below ground surface
BMPs	Best Management Practices
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CaISO	California Independent System Operator
Caltrans	California Department of Transportation
CAA	Clean Air Act
CAP	Bay Area 2010 Clean Air Plan
CARB	California Air and Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CUPA	Certified Unified Program Agency
CFCs	chlorofluorocarbons
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
City	City of San José
CMP	Congestion Management Program
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalents

CEC	California Energy Commission
CRAH	Computer Room Air-Handling
CRHR	California Register of Historical Resources
dBA	A-weighted decibel
DBH	diameter at breast height
DNL	day/night noise level
DOC	Determination of Compliance
DPF	diesel particulate filters
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
ESLs	environmental screening levels
FAA	Federal Aviation Administration
FAR Part 77	Federal Aviation Regulations, Part 77 Objects Affecting Navigable Airspace
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FSC	Forest Stewardship Council
FTA	Federal Transit Administration
General Plan	Envision San José 2040 General Plan
g/bhp-hr	grams per brake horse-power hour
GOSBGF	Great Oaks South Backup Generating Facility
GOSDC	Great Oaks South Data Center
gsf	gross square feet
GWh	gigawatt hours
GWP	global warming potential
HAPs	Hazardous Air Pollutants
HFCs	hydrofluorocarbons
HRA	health risk assessment

HVAC	heating, ventilation, and air conditioning
H_2S	Hydrogen sulfide
IGBT	Insulated Gate Bipolar Transistor
IP	Industrial Park
IT	information technology
kV	kilovolt
L_{max}	maximum A-weighted noise level
LID	Low Impact Development
LORS	laws, ordinances, regulations, and standards
LOS	level of service
MBTA	Migratory Bird Treaty Act
MCLs	maximum contaminant levels
MEIR	Maximum exposed individual residential receptor
MERV	Minimum Efficiency Reporting Value
MEIS	Maximum exposed individual sensitive receptor
MEIW	Maximum exposed individual worker receptor
$MMTCO_2e$	million metric tons of CO_2e
MMRP	Mitigation Monitoring and Reporting Plan
MND	Mitigated Negative Declaration
MRP	Municipal Regional Stormwater NPDES Permit
MT	metric tons
MTC	Metropolitan Transportation Commission
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAD83	North American Datum of 1983
NED	National Elevation Dataset
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
N_2O	nitrous oxide
NOD	Notice of Determination
NOI	Notice of Intent

NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NWIC	California Historical Resources Information System Northwest Information Center at Sonoma State University
O_3	ozone
Pb	lead
PCBs	polychlorinated biphenyls
PDAs	Priority Development Areas
PFCs	perfluorocarbons
PG&E	Pacific Gas & Electric Company
PLC	Programmable Logic Controller
$PM_{2.5}$	Fine Particulate Matter
PM_{10}	Respirable Particulate Matter
PMI	Point of maximum impact
POC	Precursor organic compounds
ppm	parts per million
PPV	Peak Particle Velocity
PVMRM	EPA Plume Volume Molar Ratio Method
PUE	Power Utilization Efficiency Factor
RCNM	Roadway Construction Noise Model
REL	Reference Exposure Level
RHNA	Regional Housing Need Allocation
RWF	San José-Santa Clara Regional Wastewater Facility
RWQCBs	Regional Water Quality Control Boards
SB	Senate Bill
SBWRP	South Bay Water Recycling Program
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFBAAB	San Francisco Bay Area Air Basin
SFHAs	Special Flood Hazard Areas
SO_2	sulfur dioxide
SF_6	sulfur hexafluoride
SO_x	sulfur oxides

SHMA	Seismic Hazards Mapping Act
SJCE	San José Clean Energy
SJFD	San José Fire Department
SJPD	San José Police Department
SMACNA	Sheet Metal and Air Conditioning National Contractors Association
SMARA	Surface Mining and Reclamation Act
SMGB	State Mining and Geology Board
SPCC	Spill Prevention, Control and Countermeasure Plan
SPPE	Small Power Plant Exemption
SR	State Route
STLC	Soluble Threshold Limit Concentration
SUP	Special Use Permit
SV1	SV1, LLC, a wholly owned subsidiary of Equinix, LLC
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCMs	Treatment Control Measures
TCRs	Tribal Cultural Resources
TEC	Transit Employment Center
UPS	Uninterruptible Power Supply
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UTM	Universal Transverse Mercator
UWMP	urban water management plan
Valley Water	Santa Clara Valley Water District Valley Water
VMT	vehicle miles traveled
VOC	volatile organic compounds
VRF	Variable Refrigerant Flow
VRP	visibility reducing particulate
VSD	virtually safe dose
VTA	Santa Clara Valley Transportation Authority
Williamson Act	California Land Conservation Act