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San Jose Data Center

Small Power Plant Exemption Application Supplement

For the

San Jose Data Center
San Jose, California

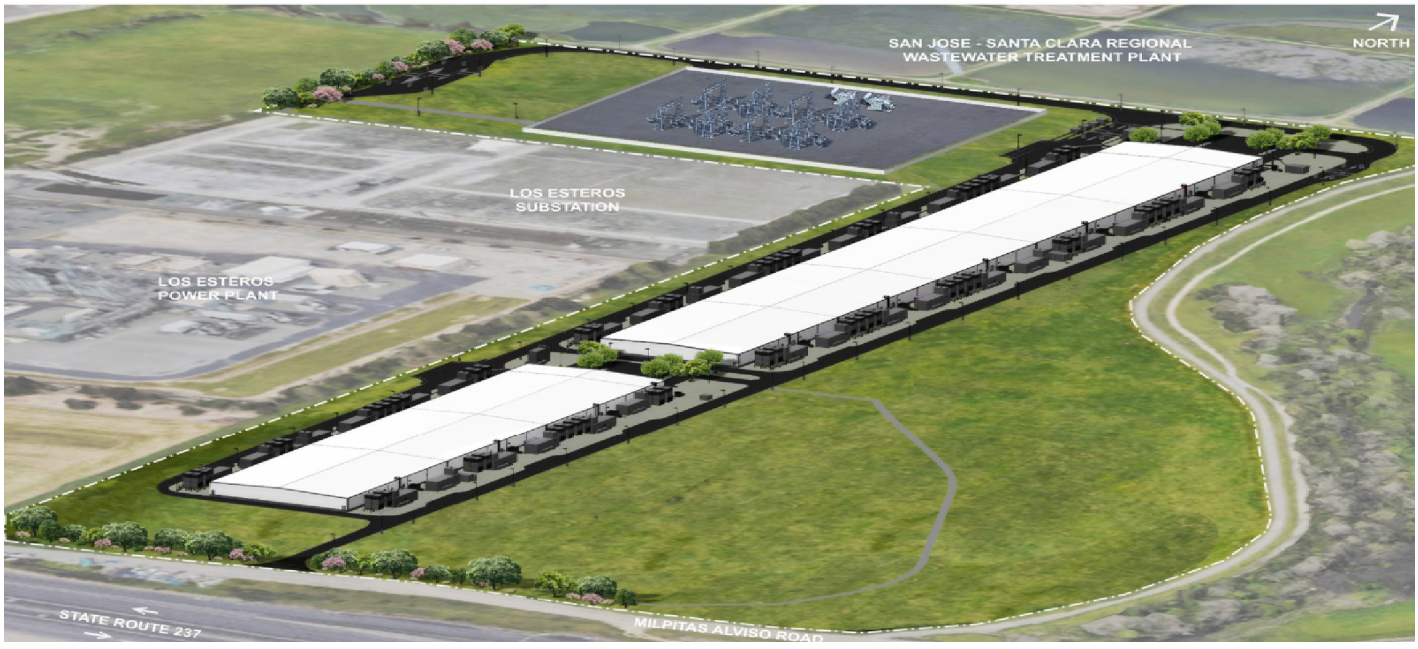
August 20, 2022

Submitted to the:
California Energy Commission

Submitted by:

Microsoft Corporation

With Technical Assistance by:



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1. Introduction

Microsoft Corporation (Applicant) proposes to construct and operate the San José City Data Center SJC (SJC) located at 1657 Alviso-Milpitas Road in San José, California. The SJC will consist of two single-story data center buildings. The expected electrical load of the project is 77 megawatts (MW), inclusive of information technology (IT) equipment, ancillary electrical/telecommunications equipment, and other electrical loads (administrative, heat rejection, and safety/security). The Applicant will stipulate in an agreement with the utility to a contractual limit in amount of electricity available from Pacific Gas and Electric's (PG&E's) system to a maximum of 99 MW.

The SPPE process allows applicants with projects between 50 and 100 MW to obtain an exemption from the California Energy Commission's (CEC's) jurisdiction and proceed with local approvals for construction and operation, rather than requiring a CEC license. The CEC can exempt a project from its site certification process provided that no substantial adverse impact on the environment or energy resources will result from the construction or operation of the project.

The Applicant prepared this SPPE application for the project, relying in part, to the extent appropriate and permitted under applicable provisions of the California Environmental Quality Act (CEQA), on relevant prior environmental documents as well as various technical studies. The SPPE application is intended to demonstrate, based on substantial evidence in the record, that the construction and operation of the project will not result in a substantial adverse impact on the environment or energy resources. This SPPE application uses the CEQA environmental checklist outlined in Appendix G of the CEQA Guidelines in the preparation of the analysis contained herein.

The SJC has been revised since the submittal of the original Application for the SPPE on November 19, 2019[1]. To achieve the project objectives, the SJC has been revised to replace the originally proposed emergency backup generation technology. Natural gas generators will replace the originally proposed diesel-fired generation technology. Unique attributes of the SJC site location make the selection of natural gas feasible, namely:1) the site's access to two independent high pressure gas pipelines that double the availability and therefore reliability of natural gas supply; and 2) the site's proximity to the Milpitas gas terminal, which also increases reliability and provides great assurance that natural gas would be available during an emergency. While the primary purpose of the natural gas generators would be to provide electrical service to the SJC during an emergency, these factors allow the SJC to reduce emissions from maintenance and testing and during emergency operations. Additionally, the use of natural gas generators enables the SJC to provide grid support through load shedding, demand response, and behind-the-meter Resource Adequacy (RA) ancillary services. The proposed generators will continue to deliver electricity to the SJC data center buildings and will not be interconnected to the electrical grid.

This revised SPPE Application provides additional environmental analysis and data demonstrating that the modifications of the SJC to utilize natural gas generators described herein will not result in any substantial adverse impact on the environment or energy resources.

1.2 Project Description

The SJC consists of two buildings with approximately 396,914 gross square feet of administrative and data center space. The northern building (designated SJC02) will be a single-story structure of approximately 244,676 gross square feet (with approximately 13,826 square feet of administrative space) with supporting amenities. The southern building (designated SJC03) will be a single-story structure of approximately 152,238 gross square feet (with approximately 13,826 square feet of administrative space) with supporting amenities. Both buildings will include administrative areas, restrooms and shower facilities, storage areas, loading docks, backup generator yards, stormwater bio-swales, paved surface

[1] Changes made within the text since the 11-19-19 submittal are provided as Appendix 1D

parking lots, and landscaping features. The project also will include an onsite 230-kilovolt (kV) substation with two 230-kV electrical supply lines that will connect to PG&E's Los Esteros Substation, located adjacent to the site. The approximately 64.5-acre project site (Assessor's Parcel No.: 015-31-054) is designated Light Industrial under the adopted Envision San José 2040 General Plan (City of San José 2011); is identified as Light Industrial in the applicable Alviso Master Plan; and is zoned LI-Light Industrial. Figure 1-1 shows the regional location of the project site, and Figure 1-2 identifies the project location as well as an aerial view of the existing site conditions. A site plan is provided as Figure 1-3, and the proposed construction laydown location map is provided as Figure 1-4.

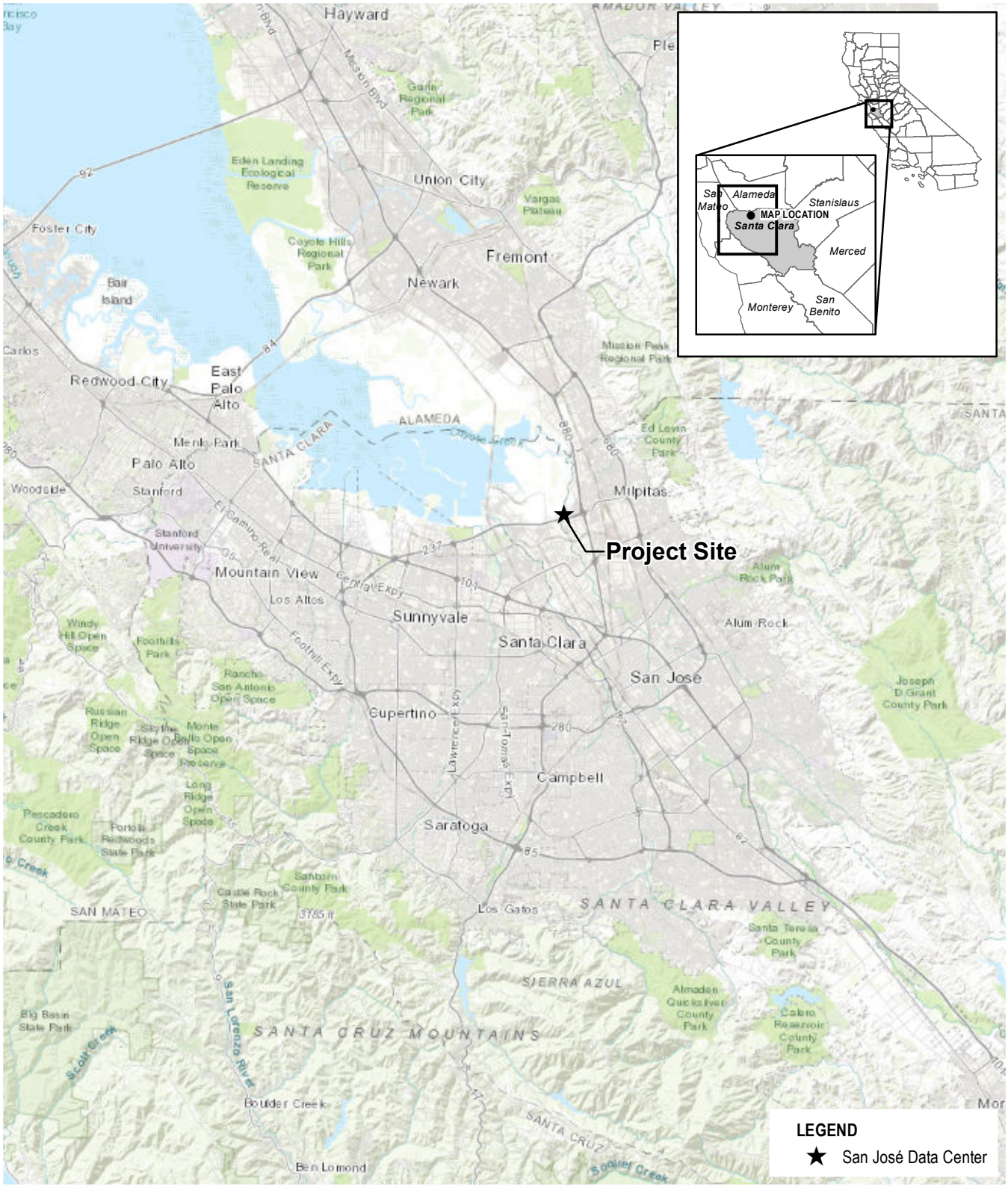
The Applicant has revised the data center building design due higher expected energy consumption by the information technology equipment likely to be installed. In order to accommodate this increase in energy consumption, the size of the southern building was reduced in size to maintain the project's energy consumption to less than 100 MWs.

To provide reliable operation of the project in the event of loss of electrical service from the local electric utility provider, PG&E, the project will include 224 0.45-MW standby natural gas generators to provide electrical power to support the IT load during utility outages or certain onsite electrical equipment interruptions or failures. These generators will be deployed in redundant configurations (that is, all 224 generators will never be operating at the same time at 100 percent) to ensure uninterrupted power, up to the maximum of 99 MW (with an expected load of 77 MW[2]). In addition to the 224 backup generators, the project will include two administrative Tier 4 diesel-fired generators, rated at 1.25 MW and 0.5 MW, to support administrative functions during an interruption in the normal delivery of electrical power from the utility. The onsite substation will be located in the northwestern corner of the project site and will interconnect to the existing, adjacent PG&E substation.

As shown on Figure 1-2, the project will require offsite linears for potable water, reclaimed water, stormwater, sanitary sewer, natural gas, and electrical. Natural gas is also proposed for comfort heating of the data center buildings.

For redundancy purposes, three potable water lines are proposed. Water Line Route #1 and Water Line Route #2 begin in the northwestern corner of the project. Both routes travel south to the proposed entrance road, Nortech Extension. From there, they both turn west to Zanker Road. At Zanker Road, Water Line Route #1 heads north briefly and then west, ultimately connecting to the Nortech valve. Water Line Route #1 is approximately 1.5 miles (7,900 feet) long. At Zanker Road, Water Line Route #2 turns south before turning west alongside Highway 237, and eventually turning south to go under Highway 237 to connect to the new Holger valve. Water Line Route #2 is approximately 1.3 miles (7,100 feet) long. Water Line Route #3 begins at the southwestern corner of the project, and heads generally east to Zanker Road, where it will parallel Water Line Route #2 connecting to the new Holger valve. Water Line Route #3 is approximately 1.4 miles (7,500 feet) long. The water will come from the San José Municipal Water System to the project.

[2] Total power use assumes 224, 0.45-MW natural gas generators operating at 75 percent load, plus the admin generators ((224 * 0.448 MW * 0.75) + 1.25 MW + 0.5 MWs = 77.0 MWs).



Source:
ESRI Service Layer

Figure 1-1
Regional Location
San José Data Center (SJC02)
San José, California

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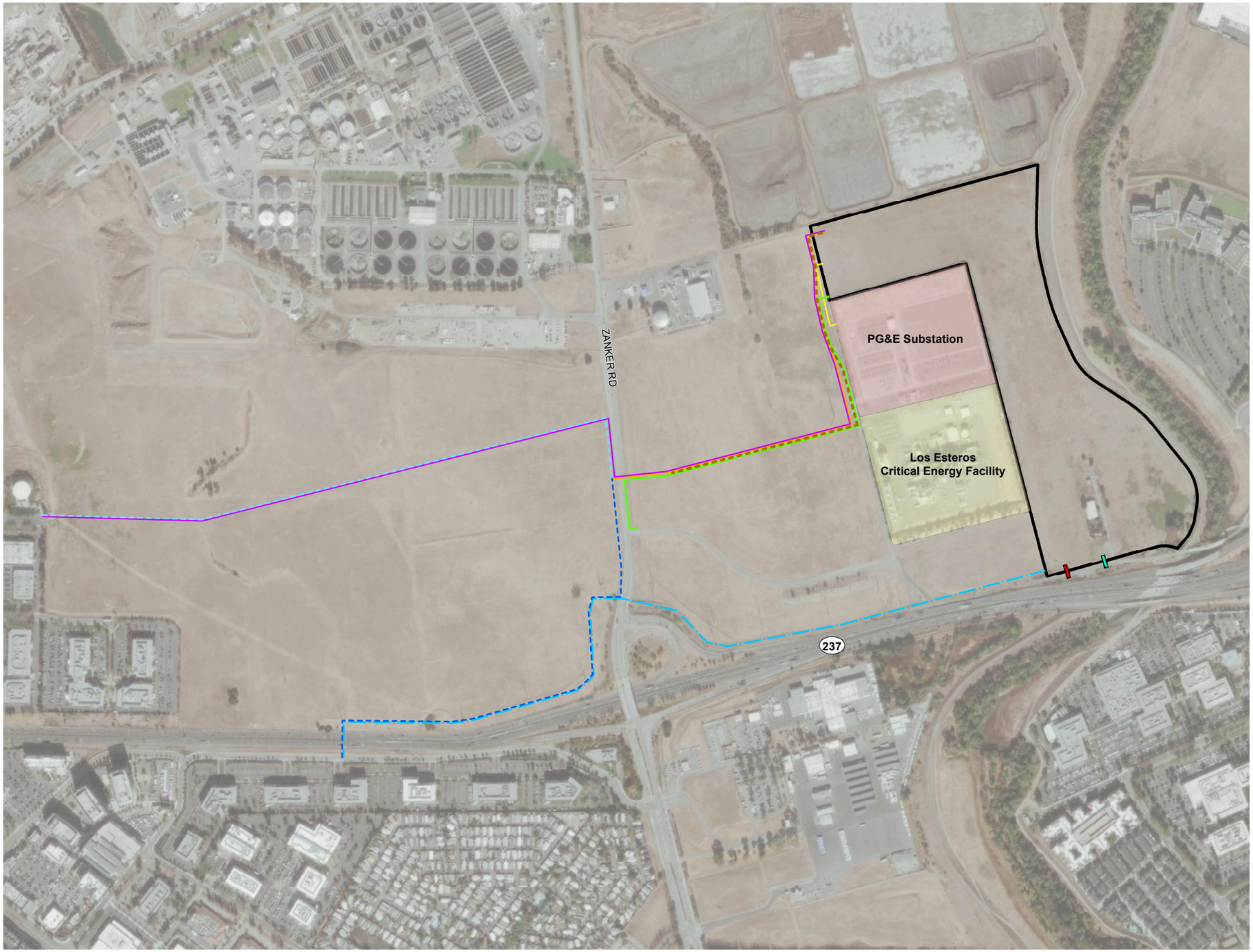
\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\L\LIGHTSPEED\MAPS\REPORT\FIG1_1_REGIONALMAP.MXD 8/12/2019 5:01:21 PM



LEGEND

- Project Site
- Los Esteros Critical Energy Facility
- PG&E Substation
- Proposed Storm Drain
- Proposed Gas Line #1
- Proposed Gas Line #2
- Proposed Sanitary Sewer
- Proposed Reclaimed Water
- Proposed Water Line Route #1
- Proposed Water Line Route #2
- Proposed Water Line Route #3
- Proposed Shared Water Line
- Proposed Electrical Supply Line

IMAGE SOURCE:
ESRI Online 2019

N

0 750 1,500
Feet

Figure 1-2R
Project Location
San José Data Center (SJC02)
San José, California

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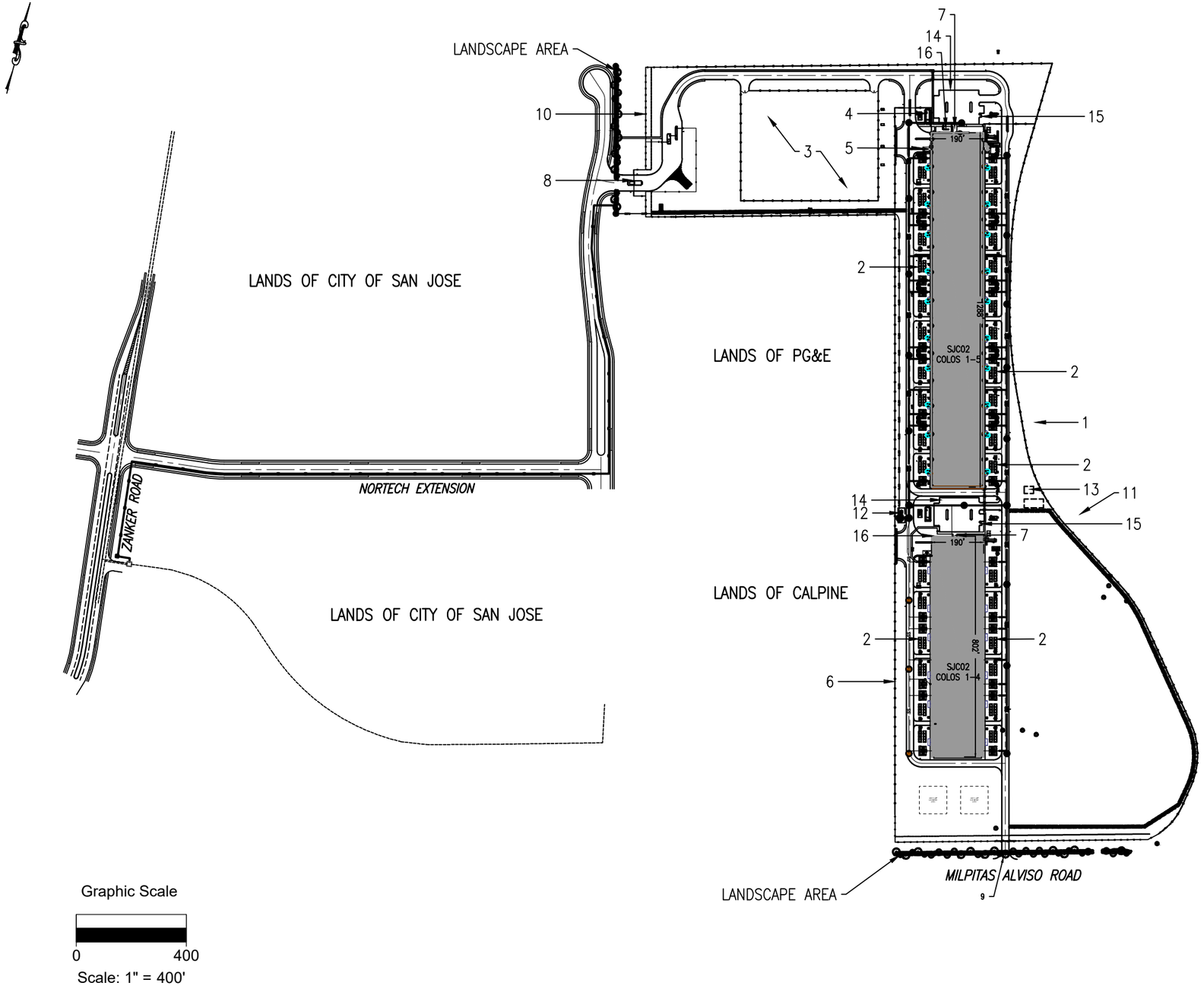
\\DC1VS01\GISPROJ\L\LIGHTSPEED\SJDC\MAPS\REPORT\2021\FIG1_2R_LOCATIONMAP.MXD 8/10/2021 12:06:38 PM



LEGEND:

PROPERTY LINE AND LIMIT OF DISTURBANCE

1. BIOSWALE
2. GENERATORS/UTILITY YARDS
3. SUBSTATION
4. GENERATOR PAD (TYP.)
5. REFUSE/RECYCLING CANOPY
6. PROPERTY LINE
7. ADA ENTRY
8. SITE ENTRANCE/EXIT
9. SECONDARY SITE ENTRANCE/EXIT
10. FENCED PERIMETER (8')
11. EXISTING STORMWATER EASEMENT
12. SANITARY PUMP STATION
13. CAR PARKING
14. MOTORCYCLE PARKING
15. BICYCLE PARKING

Figure 1-3R
Site Plan
San José Data Center (SJC02)
San José, California

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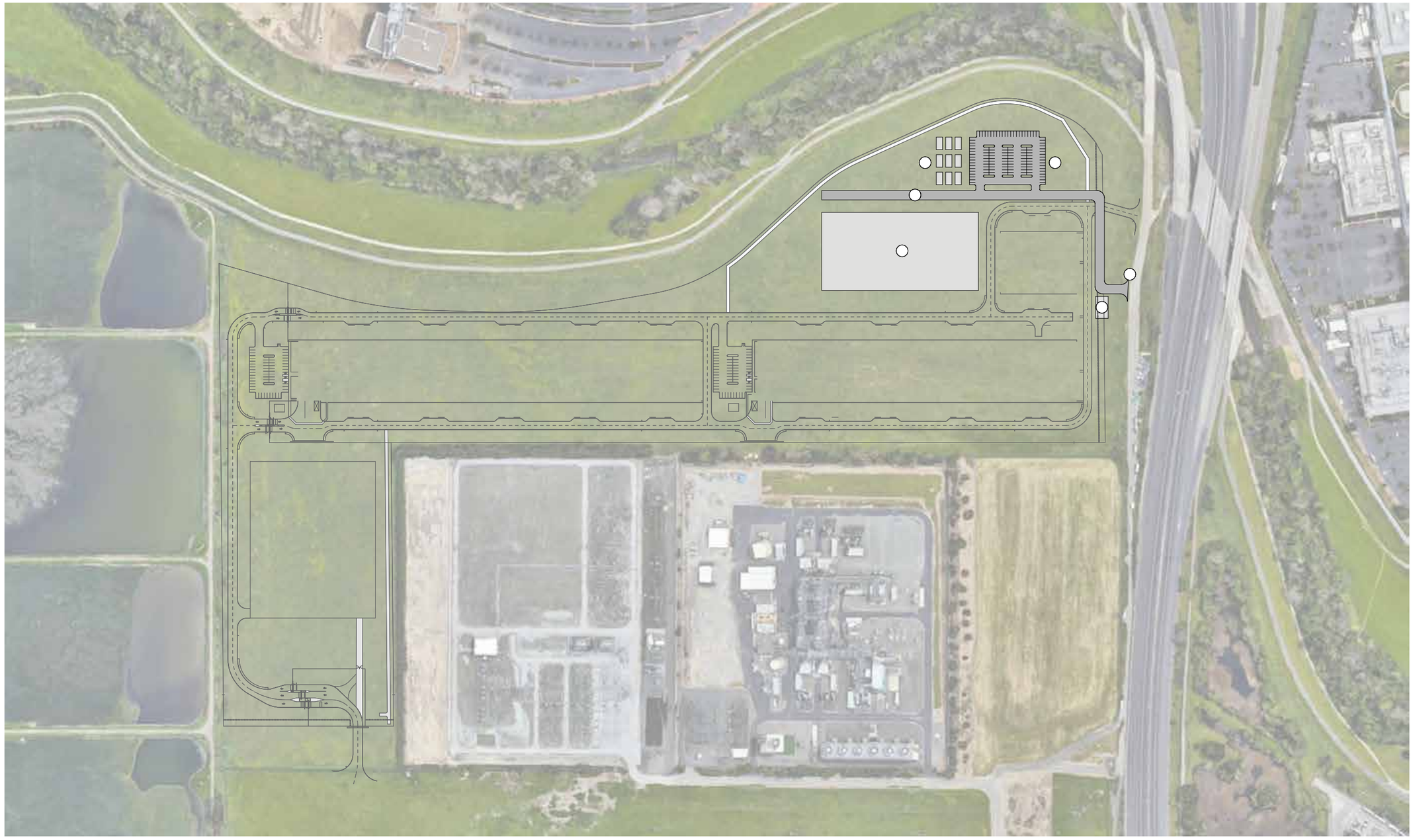

1 - LAYDOWN STAGING DIAGRAM

① CONSTRUCTION LAYDOWN
② GRAVEL ROAD
③ JOB SITE TRAILERS
④ CRAFT PARKING
⑤ VEHICLE WASH-DOWN
⑥ EXISTING SITE ENTRY

North

0 160 320
Approximate scale in feet

Figure 1-4
Proposed Construction Laydown
San José Data Center (SJC02)
San José, California

EC0821191740SAC FILENAME: Fig 1-4 Construction Laydown Diagram.pdf

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Reclaimed water will be used at the site for process cooling and landscaping purposes. The reclaimed water line will start at the northwestern corner of the project site and proceed south to the proposed entrance road, Nortech Extension. From there the line turns west and ends at an existing reclaimed water line that is oriented generally north to south. The reclaimed water line will be approximately 0.5 mile (2,900 feet) long.

A sanitary sewer line will begin at the northwestern corner of the project site and head south to the proposed entrance road, where the line turns to the west. At Zanker Road, the line turns south and will connect to the existing sanitary sewer force main/pump station at the corner of Zanker Road and Thomas Foon Chew Way. The sewer line is approximately 0.6 mile (3,300 feet) long.

The stormwater line for the project will begin in the northwestern corner of the project site, paralleling the water line route and terminating at Nortech Parkway extension off Zanker Road, where it will tie into the City of San José's stormwater system in the vicinity of Nortech Parkway. The stormwater line to Zanker Road is approximately 0.55 mile (3,000 feet) long.

Natural gas will be provided by Pacific Gas and Electric Company (PG&E) via two independent pipeline interconnections; one to natural gas Line 101 and another to Line 109, both located within Alviso-Milpitas Road adjacent to the southern portion of the project site. Each new interconnection pipeline will be approximately 50 feet from the project property line.

The onsite substation will be located in the northwestern corner of the project site and will interconnect to the PG&E substation to the immediate south via two, approximately 0.2-mile-long (1,000 foot-long) underground distribution lines located on the western side of the PG&E substation.

The proposed project also includes the extension of a Class I improved trail along the east side of Zanker Road from intersection of the existing bike trail at Zanker Road to the new Nortech Parkway extension (shown on Figure 3.16-2R of the Recreation section) in order to provide a trail connection to the Coyote Creek Trail.

1.3 Environmental Determination

This SPPE application identifies the potential impacts from the construction and operation of the SJC and evaluates those impacts to applicable significance standards for each SPPE/CEQA topic area. Development activities on the project site started in the early 2000s, as explained more fully in the USDataport project Environmental Impact Report (Dataport EIR), consisting of the original 174-acre Los Esteros Critical Energy Facility (which included the project site) with up to approximately 2.3 million square feet of data center communication facility uses in warehouse style buildings. As that project did not ultimately proceed, a revised development application was pursued for only the approximately 64.5-acre project site. In connection therewith, a project EIR was initiated in May 2016, with the City of San José (City) certifying the EIR in September 2017[3] (City of San José 2017a, 2017b, 2017c). A copy of the Draft EIR is provided as Appendix 1A, the First Amendment to the Draft EIR is provided as Appendix 1B, and the associated approved Special Use Permit is provided as Appendix 1C.[4] The 2017 EIR analyzed two options: Option 1 proposed approximately 1.2 million square feet of light industrial development; and Option 2 proposed 436,880 square feet of data center development on the northern 26.5 acres of the site, with up to 49.5 MW of standby generation and approximately 728,000 square feet of light industrial development. Both development options required the City to rezone the 64.5-acre project site from agricultural planned development to light industrial.

The SPPE application, tiering off the previously certified EIRs to the extent appropriate and permitted under CEQA, demonstrates (based on substantial evidence in the record) that the construction and

[3] http://www.sanjoseca.gov/index.aspx?nid=6072

[4] The foregoing Draft EIR and the First Amendment to the Draft EIR, and all appendices attached thereto, constitutes the Final EIR that was certified by the City of San Jose in 2017 for the 237 Industrial Center Project.

operational impacts of the proposed SJC project are less than significant with the incorporation of design measures proposed to reduce or eliminate the potentially significant environmental impacts

1.4 References

City of San José. 2011. *Envision San José 2040 General Plan*. November.

City of San José. 2017a. *Draft Environmental Impact Report, 237 Industrial Center Project*. File Nos. C15-054 and SP16-053. Accessed October 25, 2019. http://www.sanjoseca.gov/index.aspx?nid=6072.

City of San José. 2017b. *First Amendment to Draft EIR – Response to EIR Comments and Text Edits (Final EIR), 237 Industrial Center Project*. September. Accessed October 22, 2019. http://www.sanJose.ca.gov/index.aspx?nid=6072.

City of San José. 2017c. *Special Use Permit, File No. SP16-053.*

2. Project Description

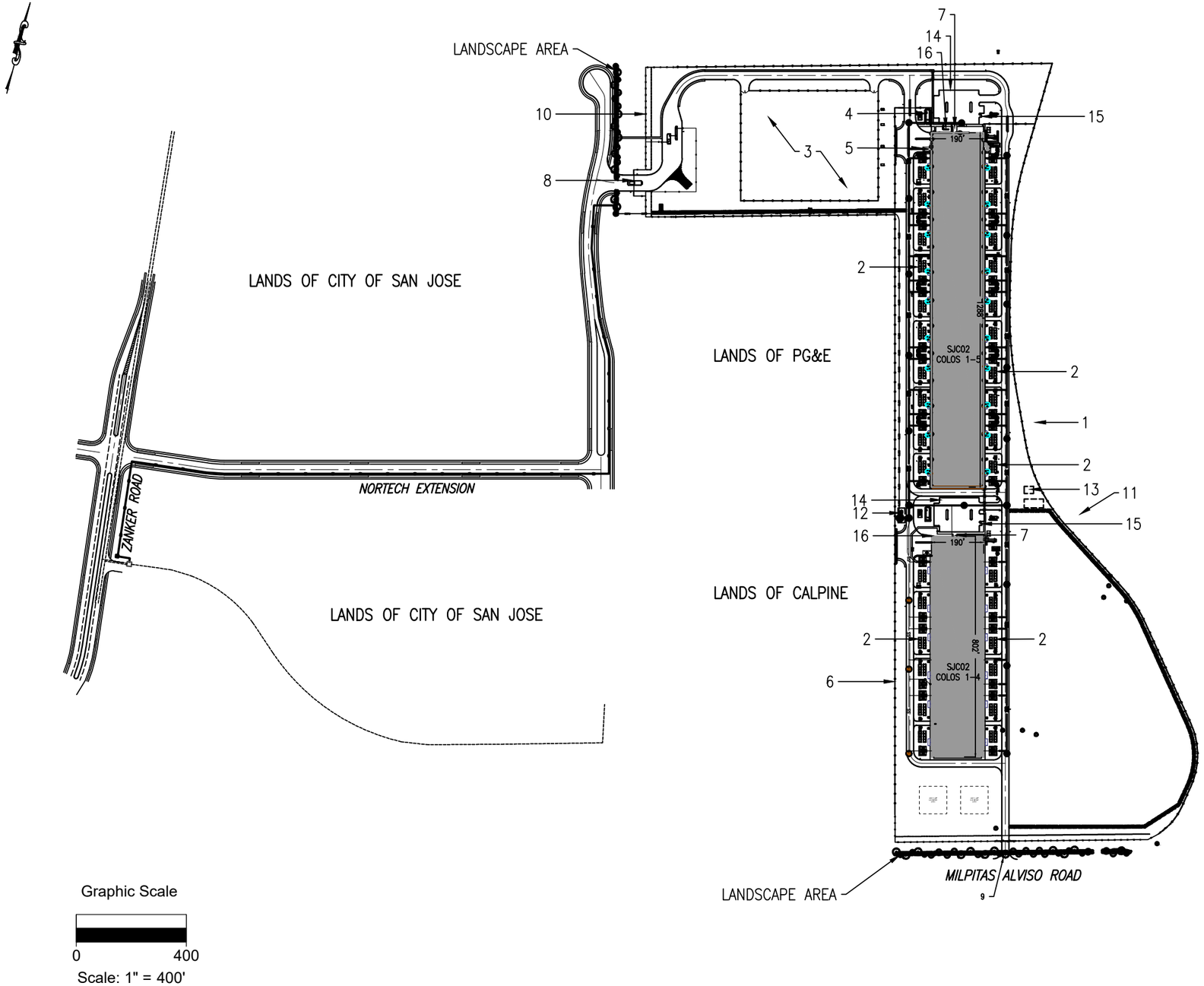
Microsoft Corporation (Applicant) proposes to construct and operate the San José City Data Center (SJC) located at 1657 Alviso-Milpitas Road in San José, California. The SJC will consist of two single-story data center buildings. The maximum electrical load of the project will be 99 megawatts (MW), although the estimated load is 77 MW, inclusive of information technology (IT) equipment, ancillary electrical/telecommunications equipment, and other electrical loads (administrative, heat rejection, and safety/security). For the purposes of the CEC and City of San José's environmental review process, this SPPE application also describes the remediation of contaminated soils at the site. To provide reliable operation of the project in the event of loss of electrical service from the local electric utility provider, Pacific Gas & Electric Company (PG&E), the project includes 224 0.45-MW renewable natural gas (natural gas) generators to provide electrical power to support the data center uses during utility outages, certain onsite electrical equipment interruption or failure, and for load shedding, demand response and behind-the-meter resource adequacy (RA) ancillary services. These generators will be deployed in redundant configurations (that is, all 224 generators will never be operating at the same time at 100 percent) to provide uninterrupted power, up to the maximum of 99 MW. Electrical power from the SJC generators cannot and will not create electricity for offsite distribution and consumption, as the electrical interconnection to the PG&E system only supports supplying electricity to the SJC and does not allow exporting electricity from the project back to PG&E (i.e., the distribution line only allows power to flow in one direction – from PG&E to SJC). In addition to the 224 backup generators, the SJC will include two administrative Tier IV diesel-powered generators, rated at 1.25 MW and 0.5 MW, to support administrative functions during an interruption in the normal delivery of electrical power from the utility. The Applicant will stipulate in an agreement with the utility to a contractual limit in the amount of electricity available from PG&E's system to a maximum of 99 MW.

2.1 Project Overview

The SJC consists of two buildings with approximately 396,914 gross square feet of administrative and data center space. The northern building (designated SJC02) is a single-story structure of approximately 244,676 gross square feet consisting of 5 colocation units (colos) with supporting amenities. The southern building (designated SJC03) is a single-story structure of approximately 152,238 square feet consisting of 3 colos with supporting amenities. Both buildings include13,826 square feet administrative space, including restrooms and shower facilities, storage areas, and loading docks. The site includes stormwater bio-swales, paved surface parking lots, and landscaping features. The site also includes an onsite 115-kilovolt (kV) substation with two, underground 115-kV electrical supply lines that will connect to PG&E's Los Esteros Substation, located adjacent to the site. The approximately 64.5-acre project site (Assessor's Parcel No. 015-31-054) is designated Light Industrial under the adopted Envision San José 2040 General Plan; is identified as Light Industrial in the applicable Alviso Master Plan; and is zoned LI--Light Industrial. Figure 1-1 shows the regional location of the SJC site, and Figure 1-2R identifies the project site location. A site plan is provided as Figure 2-1R.

The standby generation system for the project consists of 224 renewable natural gas generators, each with a standby output capacity of 0.45 MW to support the need for the data center uses to provide an uninterruptible power supply. The SJC administrative functions will be supported during electrical outages by two standby generators (designated as Admin generators), with a 1.25-MW diesel-fired standby generator for the northern building and a 0.5-MW standby diesel-fired generator for the southern building. Additional project features include electrical switchgear and subsurface distribution lines between the substation and buildings, as well as from the backup generators and from each respective building. The backup generation system will be located along the sides of each building. The SJC02 will include 141 standby generators (140 0.448-MW natural gas generators and an Admin standby generator). SJC03 will include 85 standby generators (84 0.448-MW natural gas generators and an Admin standby generator). The natural gas generators are installed in groups of 7, with four groups of seven required for each colo. The Admin generator for each building will provide continuous power to the essential systems (fire monitoring and other emergency operations) for both buildings during electrical outages. At no time will the standby generators generate more than 99 MW[1] of electricity.

[1] Total power use assumes 224, 0.448-MW natural gas generators operating at 75 percent load, plus the admin generators ((224 * 0.448 MW * 0.75) + 1.25 MW + 0.5 MWs = 77.0 MWs).



LEGEND:

PROPERTY LINE AND LIMIT OF DISTURBANCE

1. BIOSWALE
2. GENERATORS/UTILITY YARDS
3. SUBSTATION
4. GENERATOR PAD (TYP.)
5. REFUSE/RECYCLING CANOPY
6. PROPERTY LINE
7. ADA ENTRY
8. SITE ENTRANCE/EXIT
9. SECONDARY SITE ENTRANCE/EXIT
10. FENCED PERIMETER (8')
11. EXISTING STORMWATER EASEMENT
12. SANITARY PUMP STATION
13. CAR PARKING
14. MOTORCYCLE PARKING
15. BICYCLE PARKING

Figure 2-1R
Site Plan
San José Data Center (SJC02)
San José, California

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Each backup generator is a fully independent package system, with the two administrative generators having dedicated fuel tanks located on a skid below the generator. Each backup generator will be electrically interconnected to the building it serves through a combination of underground and aboveground conduit and cabling to a location within the building that houses electrical distribution equipment.

The project will include several offsite connections to potable and recycled water pipelines and to sanitary sewer and stormwater pipelines, and an access road from the northern project boundary to Zanker Road, referred to herein collectively as the "offsite infrastructure alignment areas," as shown on Figure 2-1R.

2.1.1 Potable Water

For redundancy purposes, three potable water lines are proposed. Water Line Route #1 and Water Line Route #2 begin in the northwestern corner of the project. Both routes travel south to the proposed entrance road, Nortech Extension. From there, they both turn west to Zanker Road. At Zanker Road, Water Line Route #1 heads north briefly and then west, ultimately connecting to the Nortech valve. Water Line Route #1 is approximately 1.5 miles (7,900 feet) long. At Zanker Road, Water Line Route #2 turns south before turning west alongside Highway 237, and eventually turning south to go under Highway 237 to connect to the new Holger Valve. Water Line Route #2 is approximately 1.3 miles (7,100 feet) long. Water Line Route #3 begins at the southwestern corner of the project, and heads generally east to Zanker Road, where it will parallel Water Line Route #2 connecting to the new Holger valve. Water Line Route #3 is approximately 1.4 miles (7,500 feet long). The water will come from the San José Municipal Water System to the project.

2.1.2 Reclaimed Water

Reclaimed water will be used at the site for landscaping and cooling purposes. The reclaimed water line will start at the northwestern corner of the project site and proceed south to the proposed entrance road, Nortech Extension. From there, the line turns west and ends at an existing reclaimed water line that is oriented generally north to south. The reclaimed water line will be approximately 0.5 mile (2,900 feet) long).

2.1.3 Sanitary Sewer

A sanitary sewer line will begin at the northwestern corner of the project site, and head south to the proposed entrance road, where the line turns to the west. At Zanker Road, the line turns south and will connect to the existing sanitary sewer force main/pump station at the corner of Zanker Road and Thomas Foon Chew Way. The sewer line is approximately 0.6 mile (3,300 feet) long.

2.1.4 Stormwater

The stormwater line for the project will begin in the northwestern corner of the project site, paralleling the water line route, terminating at the Nortech Parkway extension off Zanker Road, where it will tie into the City of San José's stormwater system in the vicinity of Nortech Parkway. The stormwater line is approximately 0.55 miles (3,000 feet) long.

2.1.5 Electrical Supply Line

The proposed onsite substation will be located in the northwestern corner of the project site and will interconnect to the existing, adjacent PG&E substation via two, approximately 0.2-mile-long 115 kV distribution lines. The approximately 1,000-foot-long electrical supply lines will be located within the access road on the western fenceline of the PG&E Los Esteros substation.

2.1.6 Natural Gas Supply Line

The project will include two separate natural gas supply lines at the southern border of the project site, which uniquely provides redundancy in the natural gas supply. Each line will run directly south from the project boundary to PG&E's existing gas lines located within Ranch Drive. One natural gas supply line will

interconnect with Line 109 and the other with Line 101. Each gas supply line will be approximately 75 feet in length.

2.1.7 Bike Trail Extension

The proposed project includes the extension of a Class I improved trail along the east side of Zanker Road from intersection of the existing bike trail at Zanker Road to the new Nortech Parkway extension (shown on Figure 3.16-2R of the Recreation section) in order to provide a trail connection to the Coyote Creek Trail.

2.1.8 Data Center Design

Buildings SJC02 and SJC03 will be constructed of steel structural components with metal-framed and insulated exterior walls with metal panel façade containing accent fields. The entries will include storefront glazing. Heating, ventilation, and air-conditioning equipment, including adiabatic chiller units, will be located adjacent to each building. Figures 2-2aR to 2-2bR provide the conceptual floor layout for the two buildings. Elevation drawings are presented on Figures 2-3aR through 2-3gR for Building SJC02 and 2-4aR through 2-4eR for Building SJC03. The exterior of the buildings will conform to applicable City of San José design standards. Figure 2-5R provides an oblique rendering of the project.

2.2 Electrical System Engineering

The natural gas standby generators system includes a redundant 4-to-make-3 design topology, meaning that only 75 percent of a standby generator's capacity is required to support the electrical load in the event of a utility failure. In the event of a utility service disruption, all 224 standby generators (total for both buildings) begin operation at approximately 75 percent load, with both Admin generators operating at approximately 100 percent load. The total estimated electrical demand under this scenario is approximately 77 MW. Each building's standby generators will be supported by an uninterruptible power supply (UPS) system consisting of batteries, an inverter, and switches to facilitate the uninterrupted transfer of electrical power supply from the PG&E substation to the onsite standby generators in the event of an undefined number of potential circumstances that could impact PG&E's service (resulting in a loss of power or degradation in power quality), which triggers the starting of the standby generators. The UPS system includes valve-regulated battery banks, with each bank capable of providing up to 10 minutes of backup at 100 percent load. The UPS system has a rectifier and inverter to condition electricity and is sized to deliver power to support 100 percent of the server bay demand for up to 60 seconds. However, when the electrical service is outside of pre-determined tolerances (+10 or -15 percent of alternating current nominal voltages or a frequency range of 60 Hertz plus or minus 5 percent), the UPS will transfer over to bypass to deliver generator produced power. The UPS transfer load from PG&E to UPS battery power, which triggers the start of the generators, occurs within 5 milliseconds. Load then transfers from the UPS battery system to the standby generators within 20 seconds of generator start. The UPS system provides 'clean' utility power for critical loads (IT equipment, fire/security and building management systems, and some small 120-volt circuits). The major mechanical systems, lighting, and general receptacles are not powered from the UPS sources.

The two separate 115-kV PG&E distribution lines are connected to PG&E's Los Esteros substation at two new, separate circuit breakers (Bays 7 and 8). The interconnection to the PG&E System and One Line Diagram is provided as Figure 2-6R. The SJC distribution lines will include 1,250 kcmil copper XLPE extruded dielectric cables capable of transmitting 150 Mega Volt Amps. . PG&E has indicated that since 2007, there have been five outages of the 115 kV lines feeding the Los Esteros substation. Two events (each) in 2008 and 2010 and one event in 2014, with a collective outage duration of 18 hours and 20 minutes. Since 2010, the total duration of outages for these 115 kV lines has been less than 3 minutes.

A single electrical system consists of a 34.5-kV to 480-volt substation transformer feeding the 480-volt critical bus that feeds two parallel UPS modules. The critical bus is supported by its own standby generator, and each standby generator operates independent of one another. A utility main breaker and a generator main breaker are included in the critical bus 480-volt switchgear, which are controlled by an automatic transfer controller that transfers the electricity generated by the dedicated standby generator in the event of a power outage.

Figure 2-5R
Site Rendering
San José Data Center (SJC02)
San José, California

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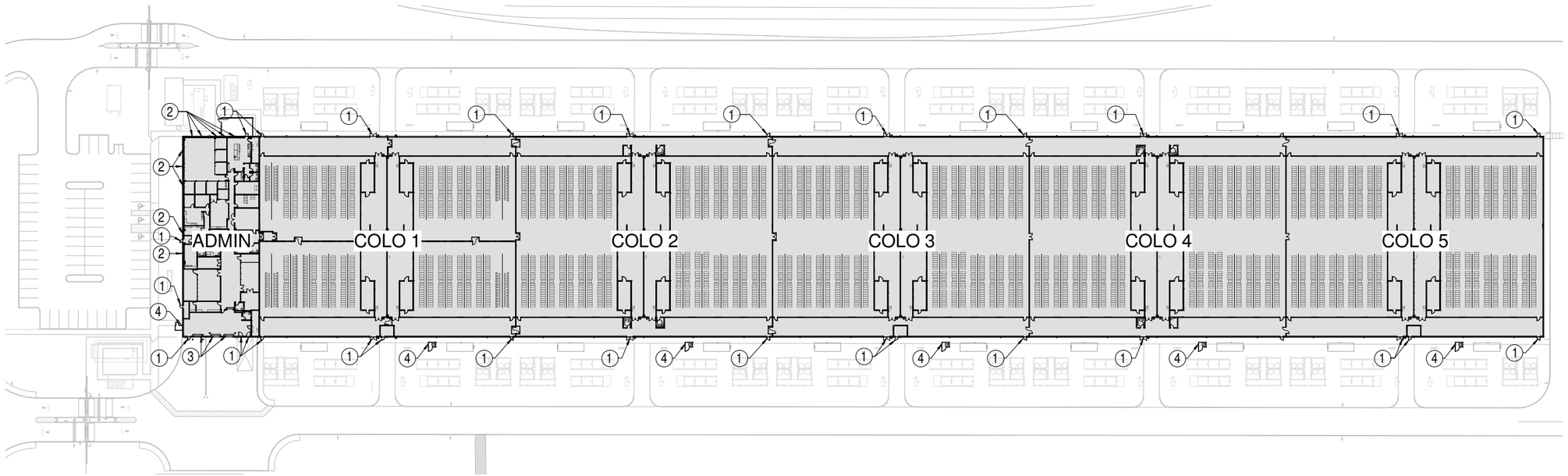


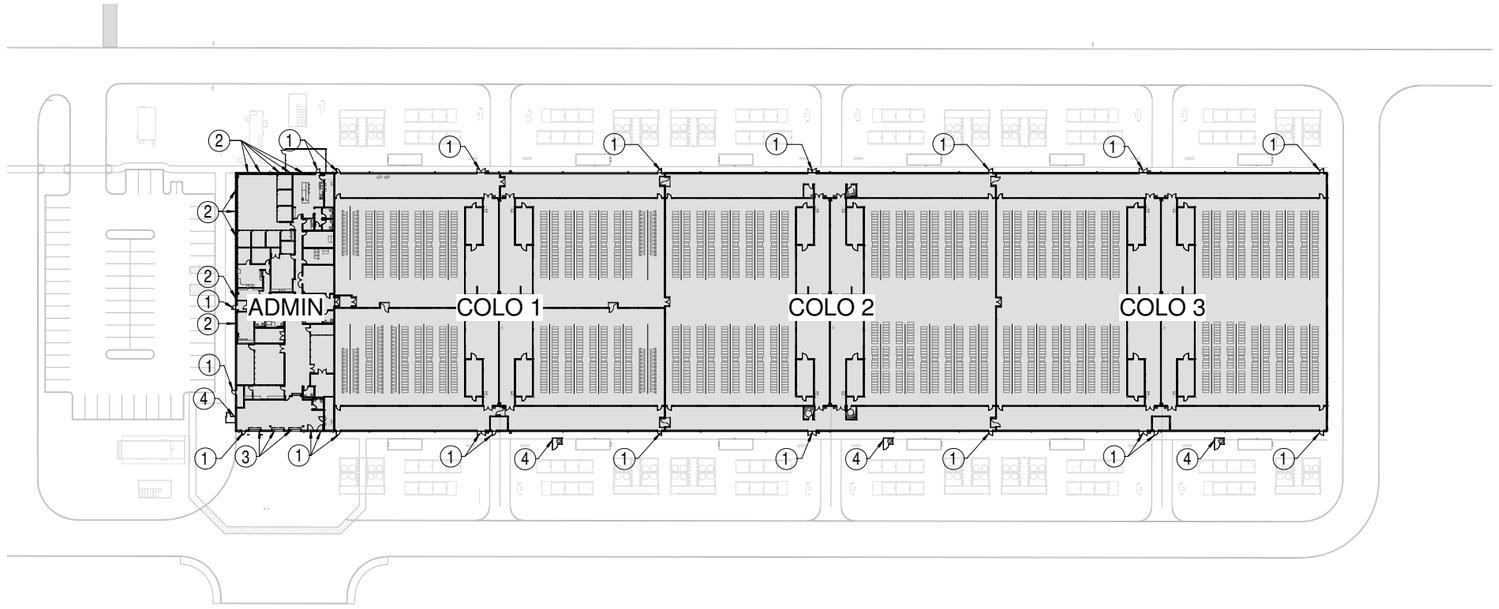
1 SJC02 - OVERALL GROUND FLOOR PLAN
1" = 50'-0"

① EXTERIOR DOOR LOCATION
② WINDOW LOCATION
③ OVERHEAD COILING DOORS
④ ROOF ACCESS LADDER

A	1	2	3	4	5

NORTH

Figure 2-2aR
Floor Plan North Building
San José Data Center (SJC02)
San José, California



1 SJC03 - OVERALL GROUND FLOOR PLAN
1" = 50'-0"

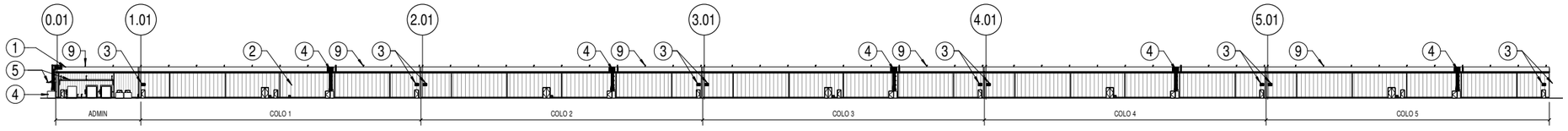
① EXTERIOR DOOR LOCATION
② WINDOW LOCATION
③ OVERHEAD COILING DOORS
④ ROOF ACCESS LADDER

A	1	2	3

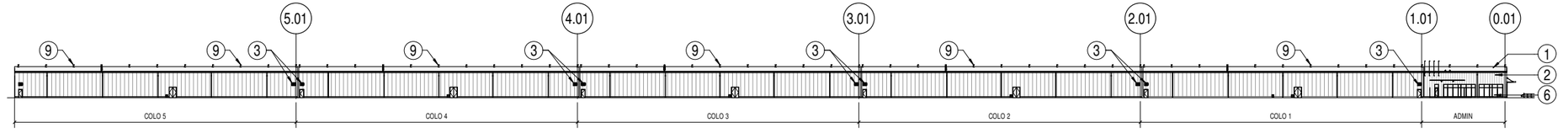
NORTH

Figure 2-2bR
Floor Plan South Building
San José Data Center (SJC02)
San José, California

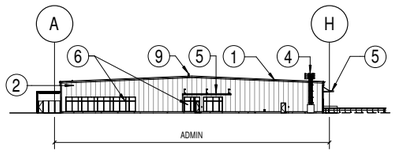
JACOBS



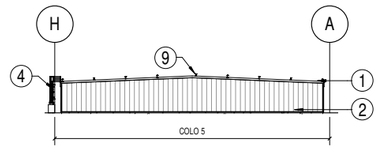
1 WEST ELEVATION - ADMIN, COLOS 1, 2, 3, 4 & 5
1" = 50'-0"



2 EAST ELEVATION - ADMIN, COLOS 1, 2, 3, 4 & 5
1" = 50'-0"



3 ELEVATION - ADMIN END WALL
1" = 50'-0"



4 ELEVATION - COLO 5 END WALL
1" = 50'-0"

① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO

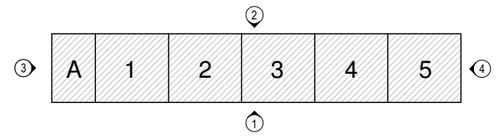
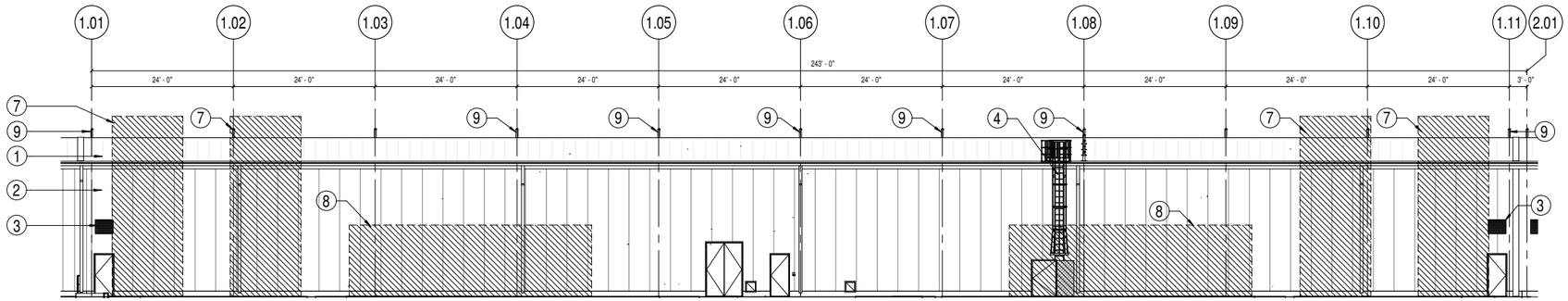
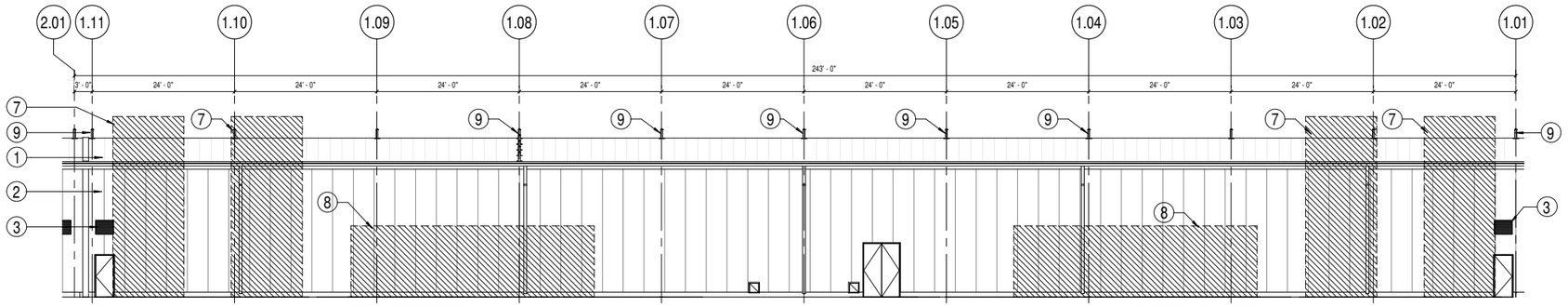


Figure 2-3aR
Overall Elevations for North Building
San José Data Center (SJC02)
San José, California

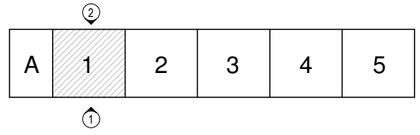


1 ELEVATION - COLO 1 WEST
3/32" = 1'-0"



2 ELEVATION - COLO 1 EAST
3/32" = 1'-0"

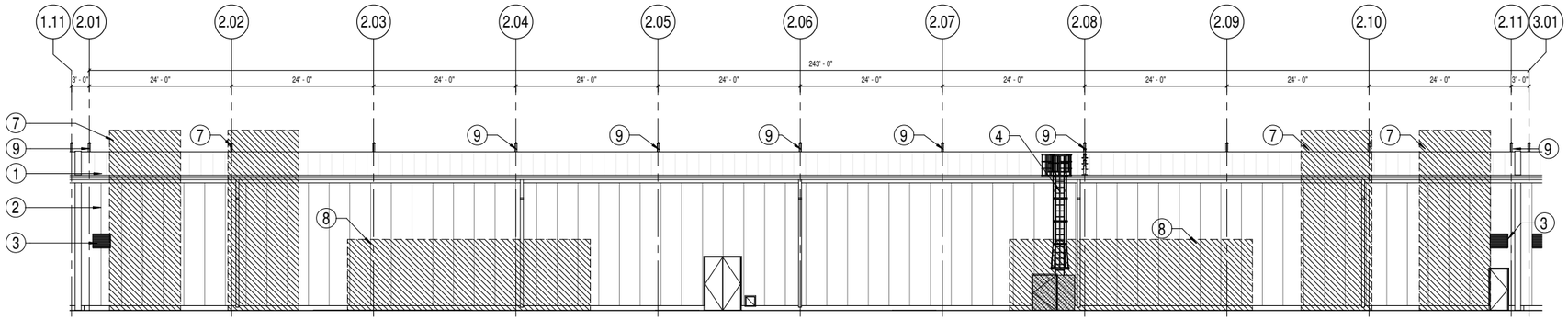
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



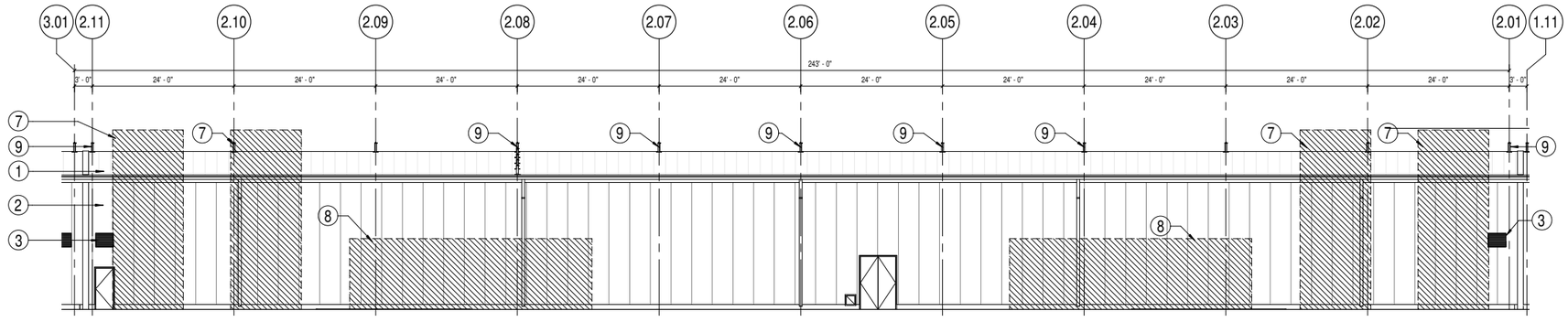
NORTH

Figure 2-3bR
Elevation Drawings for Colocation Unit 1, North Building
San José Data Center (SJC02)
San José, California

JACOBS

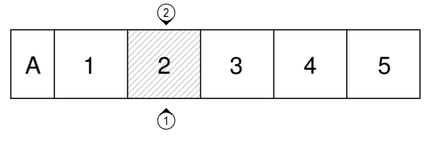


1 ELEVATION - COLO 2 WEST
3/32" = 1'-0"



2 ELEVATION - COLO 2 EAST
3/32" = 1'-0"

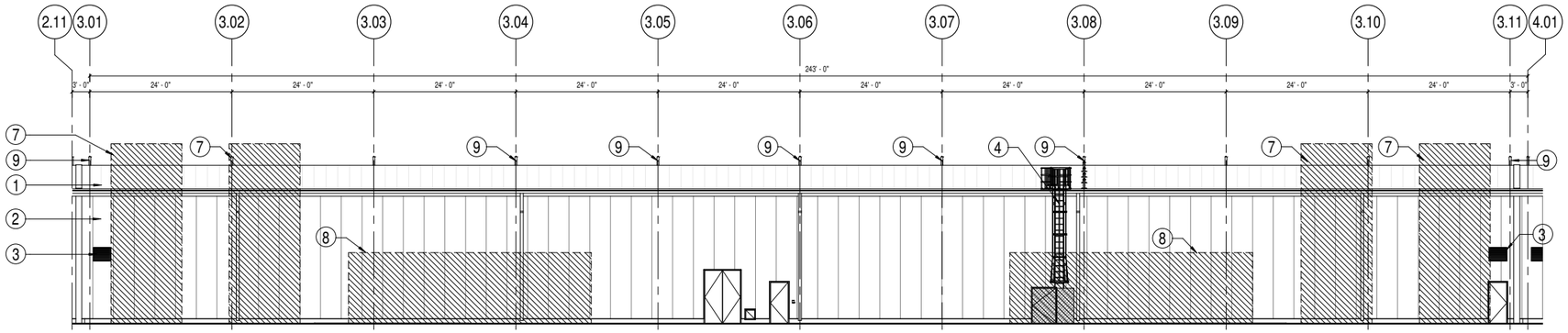
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



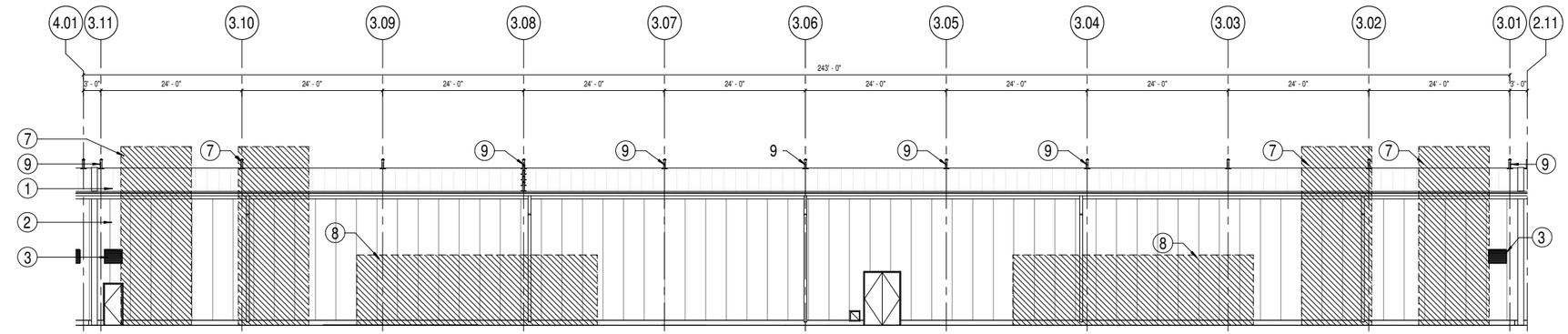
NORTH

Figure 2-3cR
Elevation Drawings for Colocation Unit 2, North Building
San José Data Center (SJC02)
San José, California

JACOBS

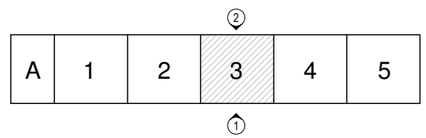


1 **ELEVATION - COLO 3 WEST**
3/32" = 1'-0"



2 **ELEVATION - COLO 3 EAST**
3/32" = 1'-0"

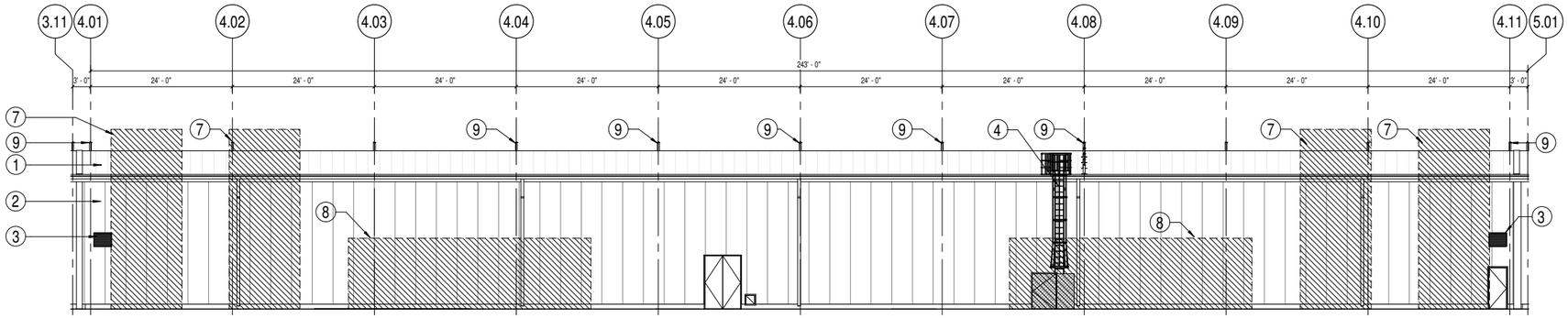
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



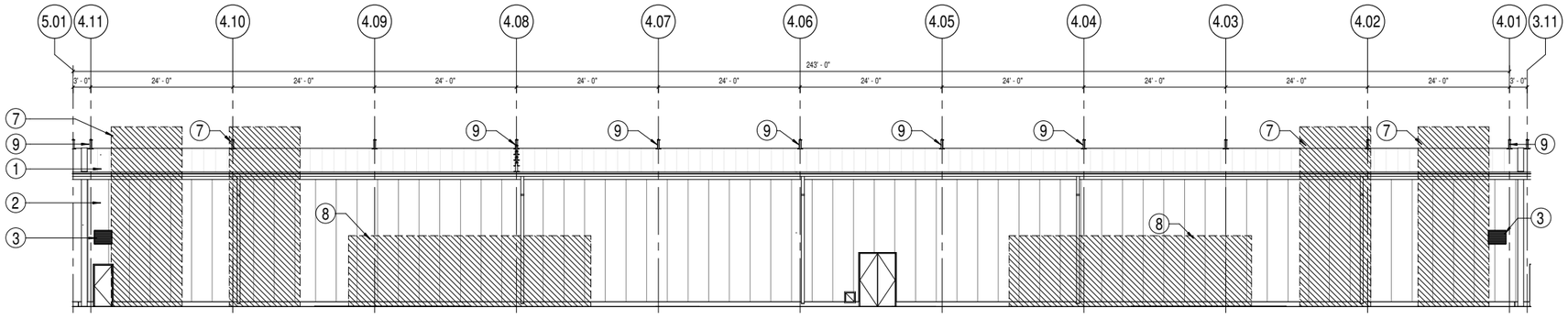
NORTH

Figure 2-3dR
Elevation Drawings for Colocation Unit 3, North Building
San José Data Center (SJC02)
San José, California

JACOBS

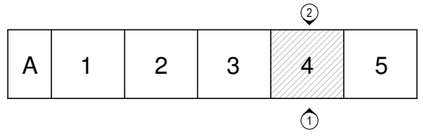


1 ELEVATION - COLO 4 WEST
3/32" = 1'-0"



2 ELEVATION - COLO 4 EAST
3/32" = 1'-0"

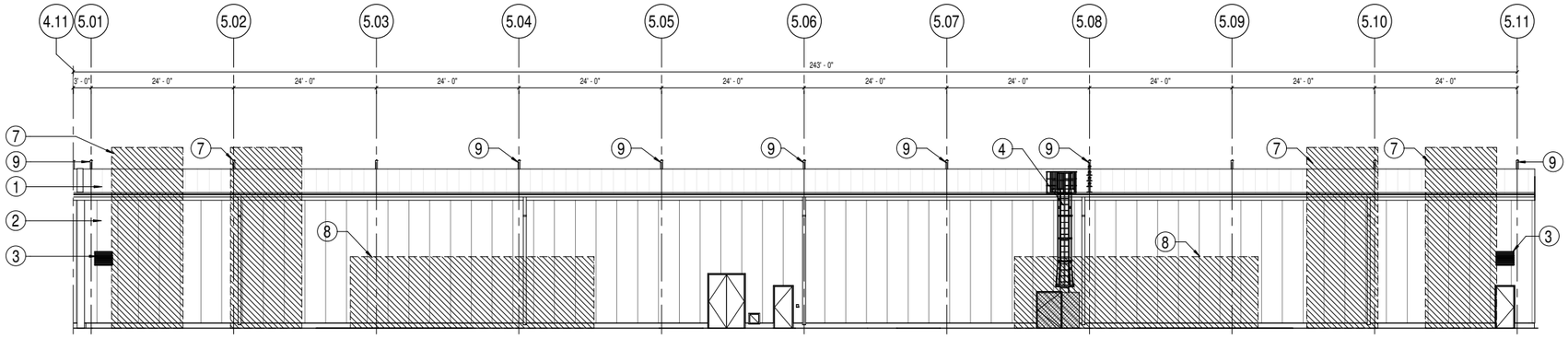
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



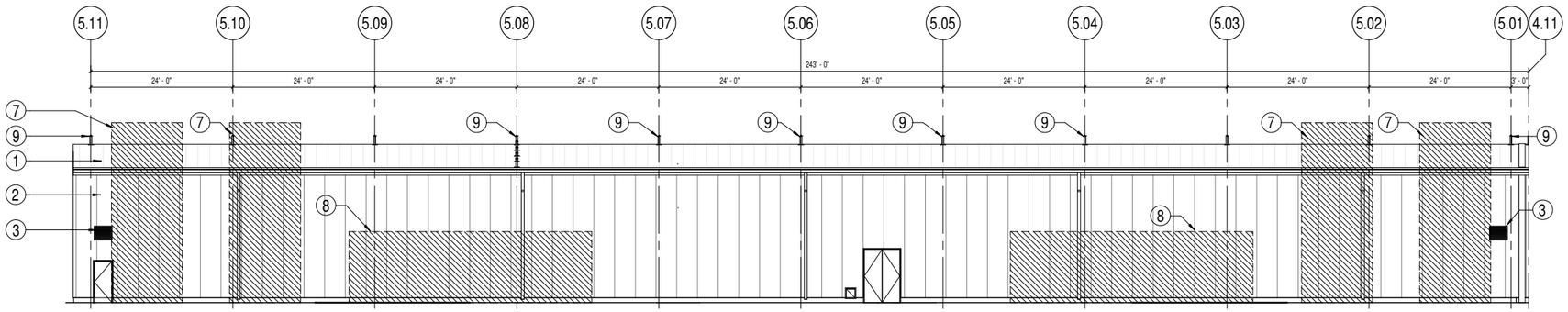
NORTH

Figure 2-3eR
Elevation Drawings for Colocation Unit 4, North Building
San José Data Center (SJC02)
San José, California

JACOBS

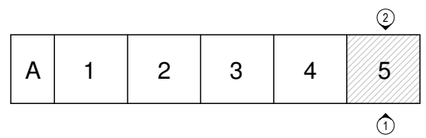


1 **ELEVATION - COLO 5 WEST**
3/32" = 1'-0"



2 **ELEVATION - COLO 5 EAST**
3/32" = 1'-0"

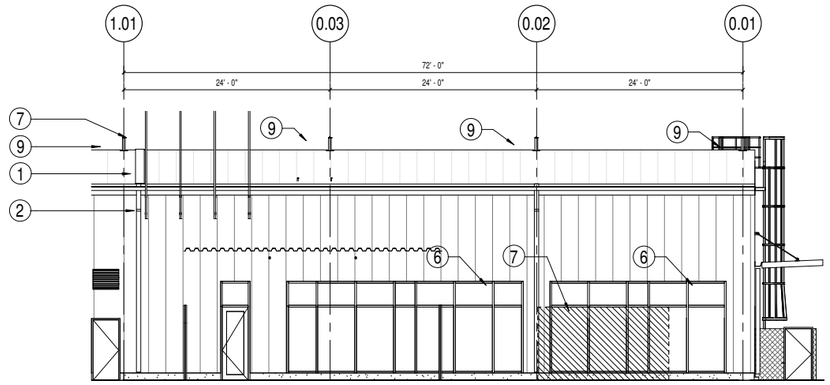
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



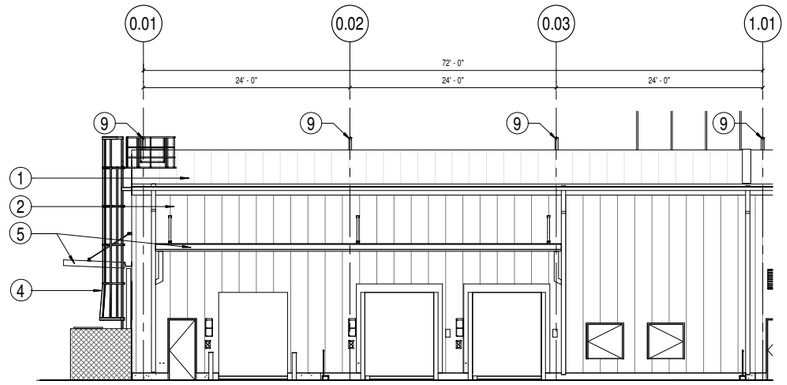
NORTH

Figure 2-3fR
Elevation Drawings for Colocation Unit 5, North Building
San José Data Center (SJC02)
San José, California

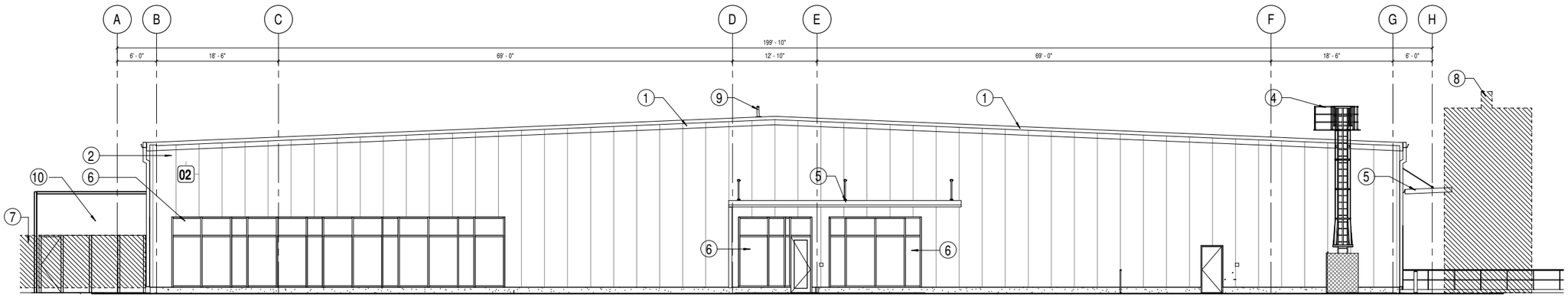
JACOBS



1 ELEVATION - ADMIN SIDE WALL (ENTRY)
1/8" = 1'-0"

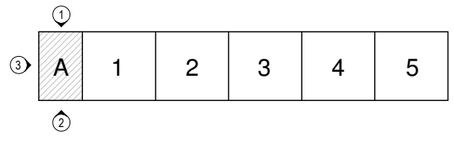


2 ELEVATION - ADMIN SIDE WALL (DOCK)
1/8" = 1'-0"



3 ELEVATION - ADMIN END WALL
1/8" = 1'-0"

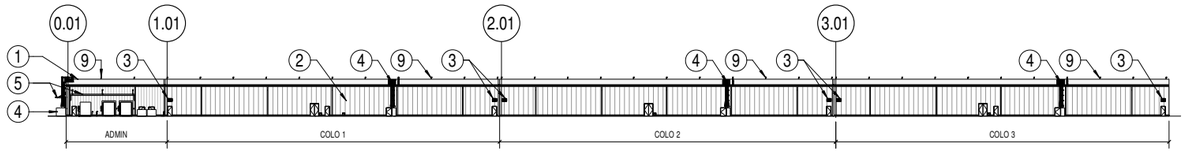
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



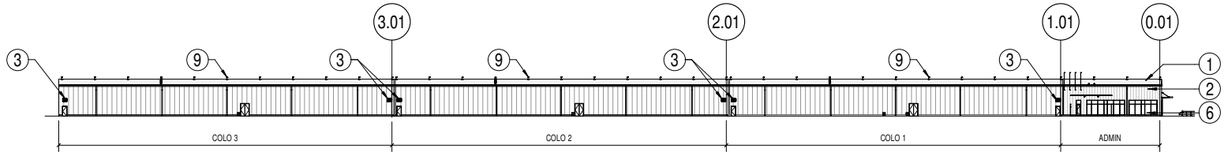
NORTH

Figure 2-3gR
Elevation Drawings for Colocation Administration North Building
San José Data Center (SJC02)
San José, California

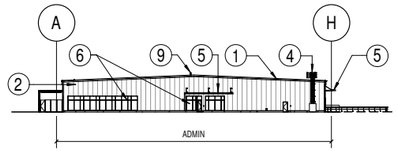
JACOBS



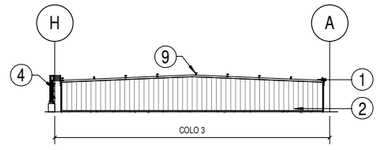
1 - **WEST ELEVATION - ADMIN, COLOS 1, 2 & 3**
1" = 50'-0"



2 - **EAST ELEVATION - ADMIN, COLOS 1, 2 & 3**
1" = 50'-0"

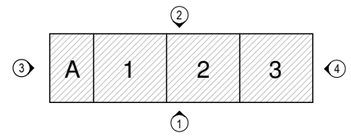


3 - **ELEVATION - ADMIN END WALL**
1" = 50'-0"



4 - **ELEVATION - COLO 3 END WALL**
1" = 50'-0"

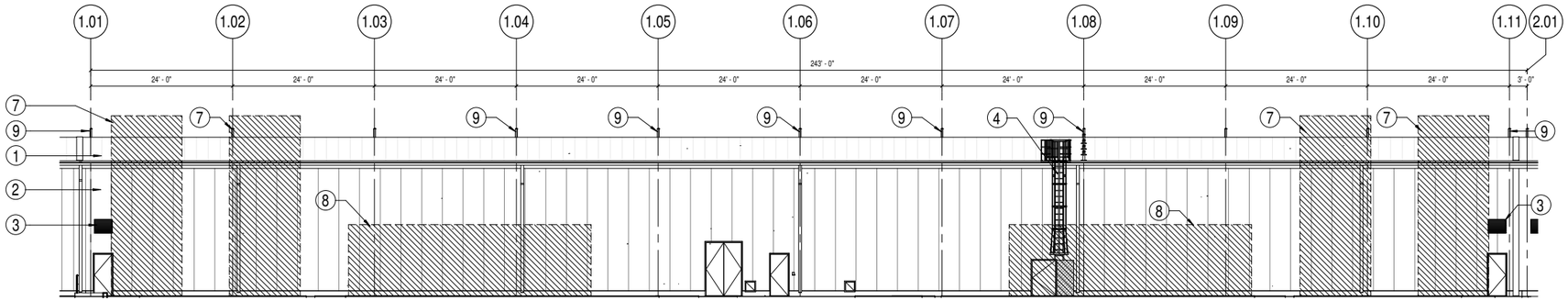
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



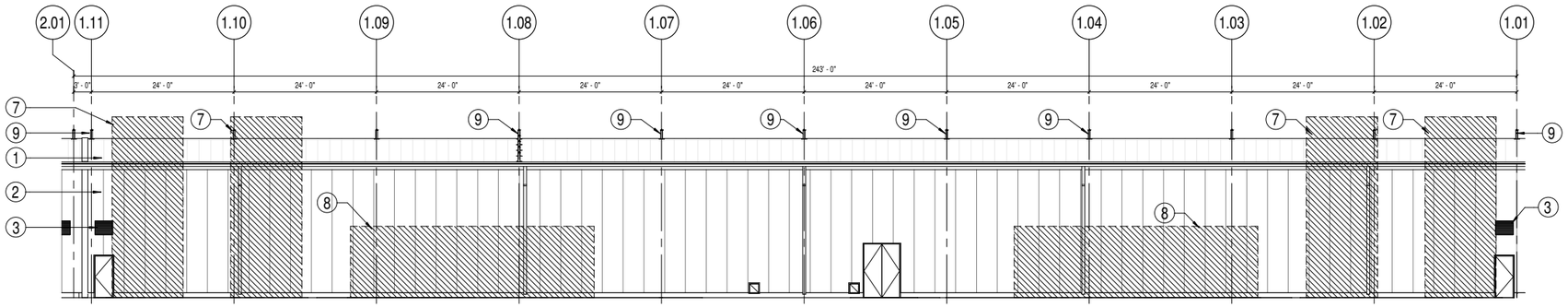
NORTH

Figure 2-4aR
Overall Elevation Drawings for South Building
San José Data Center (SJC02)
San José, California

JACOBS

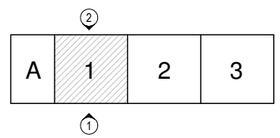


1 ELEVATION - COLO 1 WEST
3/32" = 1'-0"



2 ELEVATION - COLO 1 EAST
3/32" = 1'-0"

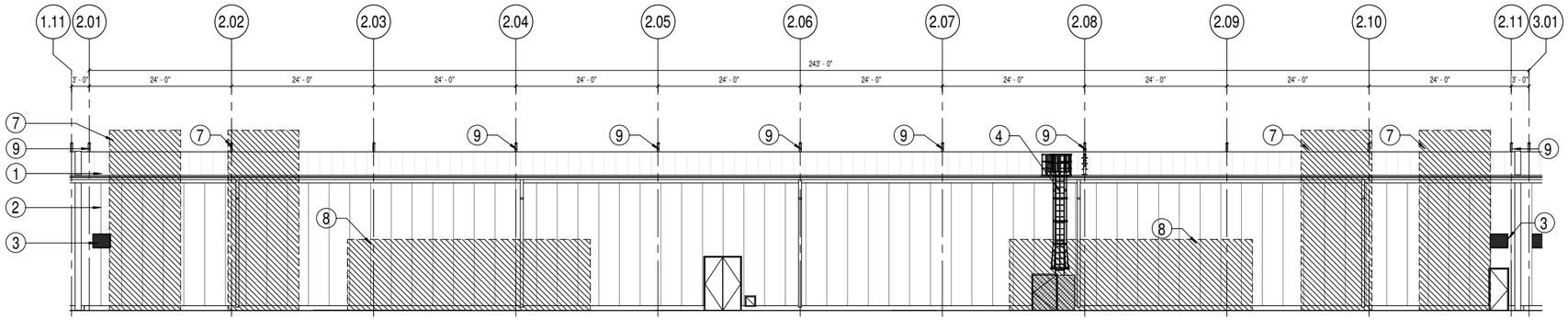
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



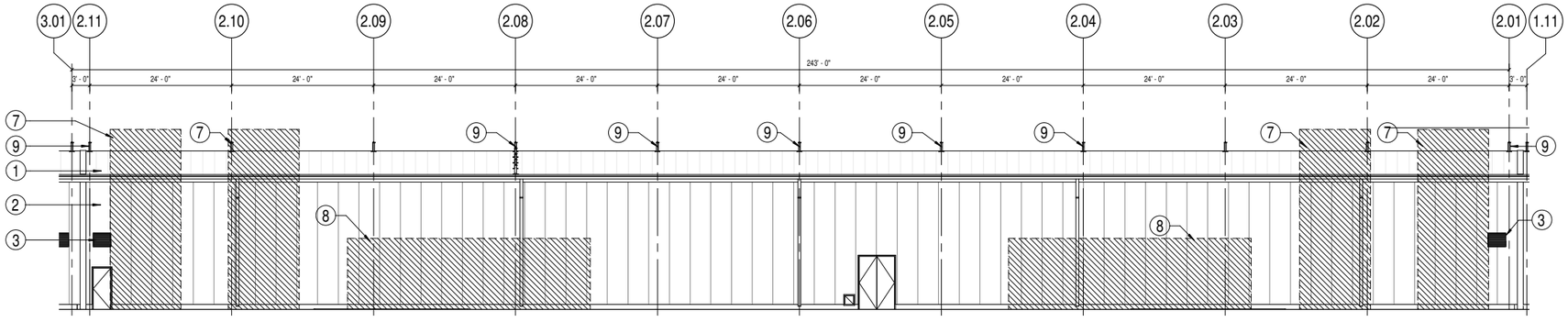
NORTH

Figure 2-4bR
Elevation Drawings for Colocation Unit 1, South Building
San José Data Center (SJC02)
San José, California

JACOBS

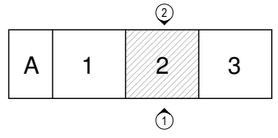


1 ELEVATION - COLO 2 WEST
3/32" = 1'-0"



2 ELEVATION - COLO 2 EAST
3/32" = 1'-0"

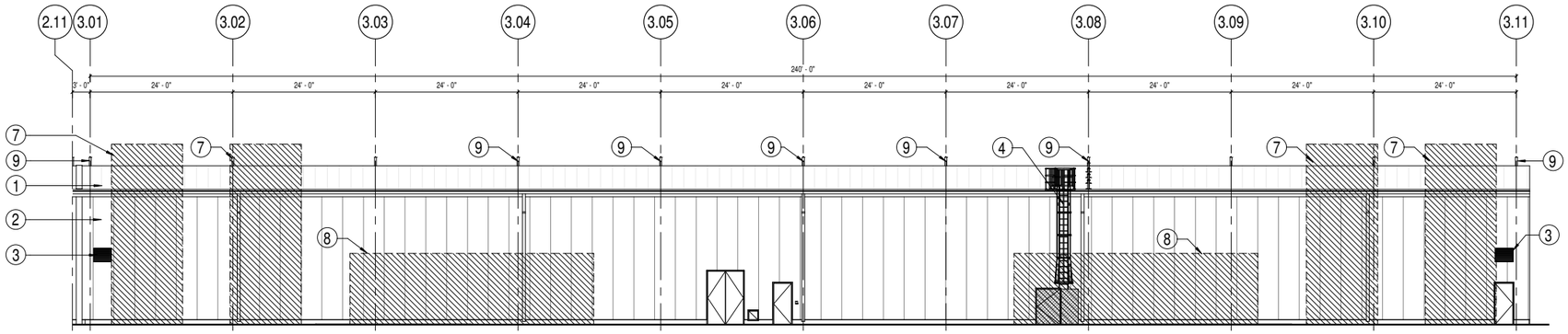
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



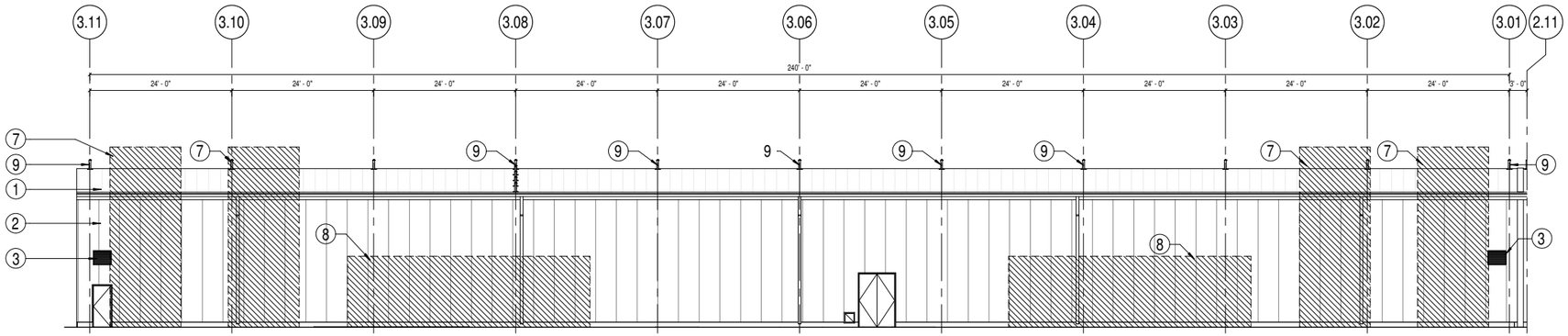
NORTH

Figure 2-4cR
Elevation Drawings for Colocation Unit 2, South Building
San José Data Center (SJC02)
San José, California

JACOBS

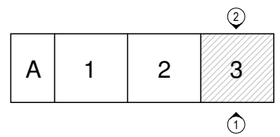


1 **ELEVATION - COLO 3 WEST**
3/32" = 1'-0"



2 **ELEVATION - COLO 3 EAST**
3/32" = 1'-0"

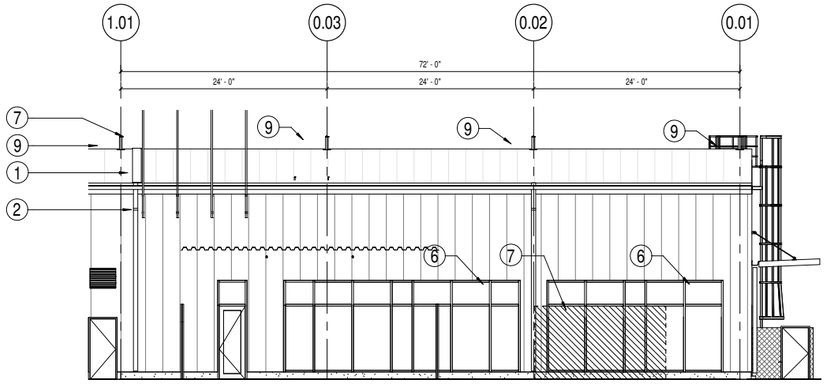
① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



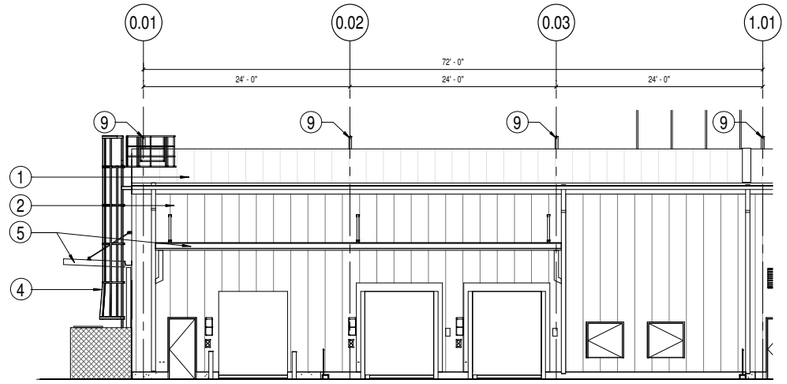
NORTH

Figure 2-4dR
Elevation Drawings for Colocation Unit 3, South Building
San José Data Center (SJC02)
San José, California

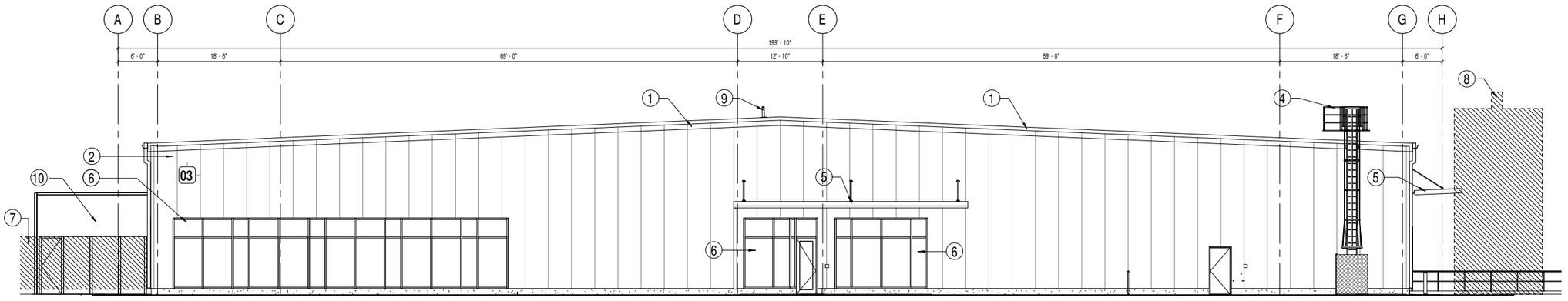
JACOBS



1 ELEVATION - ADMIN SIDE WALL (ENTRY)
1/8" = 1'-0"

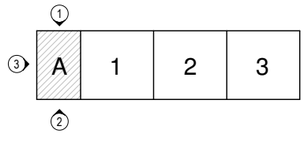


2 ELEVATION - ADMIN SIDE WALL (DOCK)
1/8" = 1'-0"



3 ELEVATION - ADMIN END WALL
1/8" = 1'-0"

① ROOF PANEL 1 (WHITE)
② METAL PANEL 1 (WHITE)
③ MECHANICAL LOUVERS (WHITE)
④ ROOF ACCESS LADDER
⑤ CANOPY
⑥ STOREFRONT 1 & GLASS 1 (CLEAR ANNODIZED & GRAY)
⑦ HVAC EQUIPMENT
⑧ EMERGENCY GENERATOR
⑨ ROOF SAFETY ANCHOR
⑩ EXTERIOR PATIO



NORTH

Figure 2-4eR
Elevation Drawings for Administrative South Building
San José Data Center (SJC02)
San José, California

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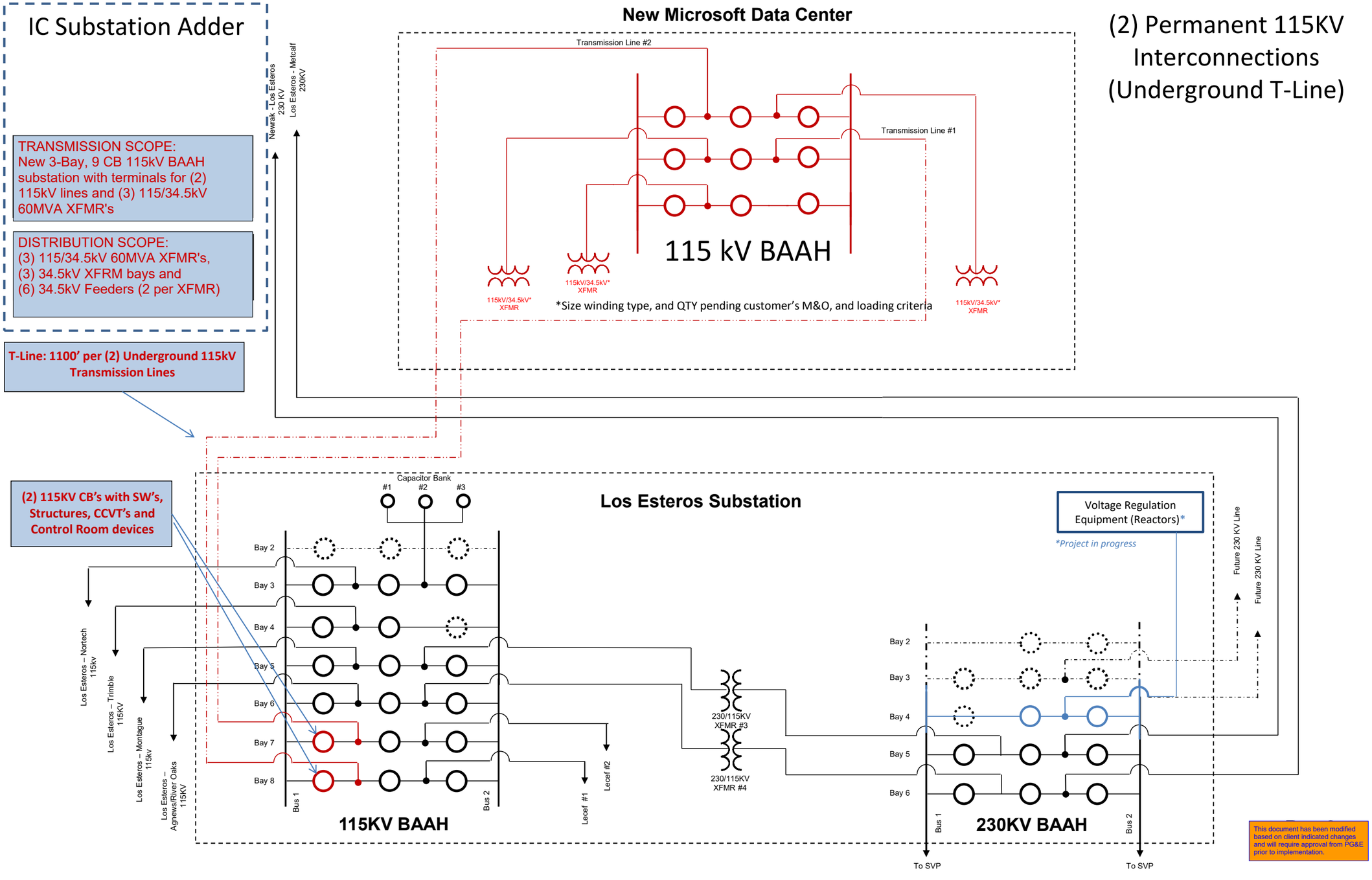


(2) Permanent 115KV Interconnections (Underground T-Line)

Figure 2-6R
Interconnection to PG&E System and One Line Diagram
San José Data Center (SJC02)
San José, California

JACOBS

The PG&E distribution lines supplying electricity to the onsite substation will be located within the project site.

2.2.1 Electrical Generation Equipment

The 224 natural gas fired generators are packaged by Enchanted Rock 21.9L natural gas engines rated at 0.45 MW (see Section 3.3 – Air Quality for more detailed information on the natural gas engines). Each engine includes two sets of 3-way catalysts that control air emissions, with one set of catalysts installed on each bank of cylinders. The catalyst sets are designed in series with a primary and secondary catalyst. Each bank of cylinders also includes its own exhaust stack, with two exhaust stacks per engine. Seven engines are installed in an enclosure comprising one unit.

The administrative generators will be a U.S. Environmental Protection Agency (EPA) Tier-4 diesel-fired generator equipped with diesel particulate filters (DPFs) and selective catalytic reduction systems (SCRs). The Admin generators will be Caterpillar Model 3512C and QSX15, with a standby generating capacity of 1.25 and 0.5 MW, respectively.

The 1.25-MW Admin generator will be approximately 13 feet wide, 41 feet long, and 16 feet tall to the top of the enclosure. The 0.5 MW Admin generator will be approximately 13 feet wide, 41 feet long, and 13 feet tall to the top of the enclosure. Each standby generator will include a separate exhaust stack approximately 30 feet above grade.

2.2.2 Fuel System

The natural gas fired generators will be supplied with fuel from the onsite metering yard, located south of building SJC03. The metering yard is interconnected to PG&E's Lines 101 and 109 via a pipeline that extends approximately 75 feet off the southern property line. Lines 101 and 109 are supplied from different parts of the PG&E natural gas system providing a high level of redundancy and resiliency. In addition, the site is located very near the Milpitas gas terminal which further increases the reliability of natural supply during emergencies.

Each administrative generator includes a diesel fuel tank with polishing filtration system. The tank will be located underneath each administrative generator and provides sufficient fuel storage to operate the generator for approximately 48 hours. The 1.25- and 0.5-MW generators include 4,800- and 2,000-gallon tanks, respectively. The Applicant will contract with multiple fuel suppliers to provide delivery within 48 hours of a request to confirm fuel availability.

2.2.3 Cooling System

The generators will be self-contained with their own radiators for cooling.

2.2.4 Water Supply and Use

Potable water will be provided by the City of San José (City). Recycled water is available and will be used onsite for process cooling and landscaping purposes. The administrative generators will require water during the initial filling of the closed-loop radiator system and periodically during maintenance events. After the initial fill, no further consumption of water by the administrative generators will be required.

Building cooling will be accomplished using adiabatic cooling technology. The adiabatic cooling technology uses a radiator-style cooling system with wetted pre-cooling pads installed upstream of the cooling tube bundle. During lower ambient conditions, the tower operates without using water on the wetted pads. However, during higher ambient temperatures (greater than 75 degrees Fahrenheit), the pre-cooling pads are wetted to reduce the incoming air temperature, resulting in greater heat rejection. The expected total water demand is approximately 535 acre-feet per year, which is primarily recycled water, with less than 1 acre-feet per year of potable water for sanitary purposes and other minor maintenance uses.

2.2.5 Waste Management

Construction- and demolition-related wastes, similar to construction and demolition for comparable projects, will be generated, managed, and disposed of consistent with applicable law, as described in Section 3.9. No significant waste materials will be generated during operation of the SJC.

2.2.6 Hazardous Materials Management

The administrative generators will include a double-walled fuel tank to minimize the potential of an accidental fuel release. As diesel fuel is not highly volatile, vapor controls are not required. The space between the walls of the fuel tank will be monitored for the presence of liquids. This monitoring system will be monitored by the onsite operations staff, who will receive automated alerts in the event of fuel leak or release. The diesel fuel and potentially the battery electrolyte (sulfuric acid) represent the only hazardous materials stored onsite in reportable quantities.

Fuel deliveries will occur as needed by fuel suppliers delivering diesel fuel via tanker trucks. These tanker trucks will park near each standby generator for refueling. Fueling will occur within a spill catch basin located under each generator fill connection. The drain to the spill catch basin will be closed prior to the start of fueling. Spill control equipment will be stored within the backup generation yard to allow immediate responses in the event of an accident.

As a safety measure, to the extent feasible, fueling operations will be scheduled at times when storm events are improbable to avoid potential impacts to water resources.

Warning signs will be installed at the fuel unloading areas to minimize the potential of refueling accidents occurring due to tanker trucks departing prior to disconnecting the transfer hose. Also, 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 fuel unloading areas.

2.3 Existing Site Condition

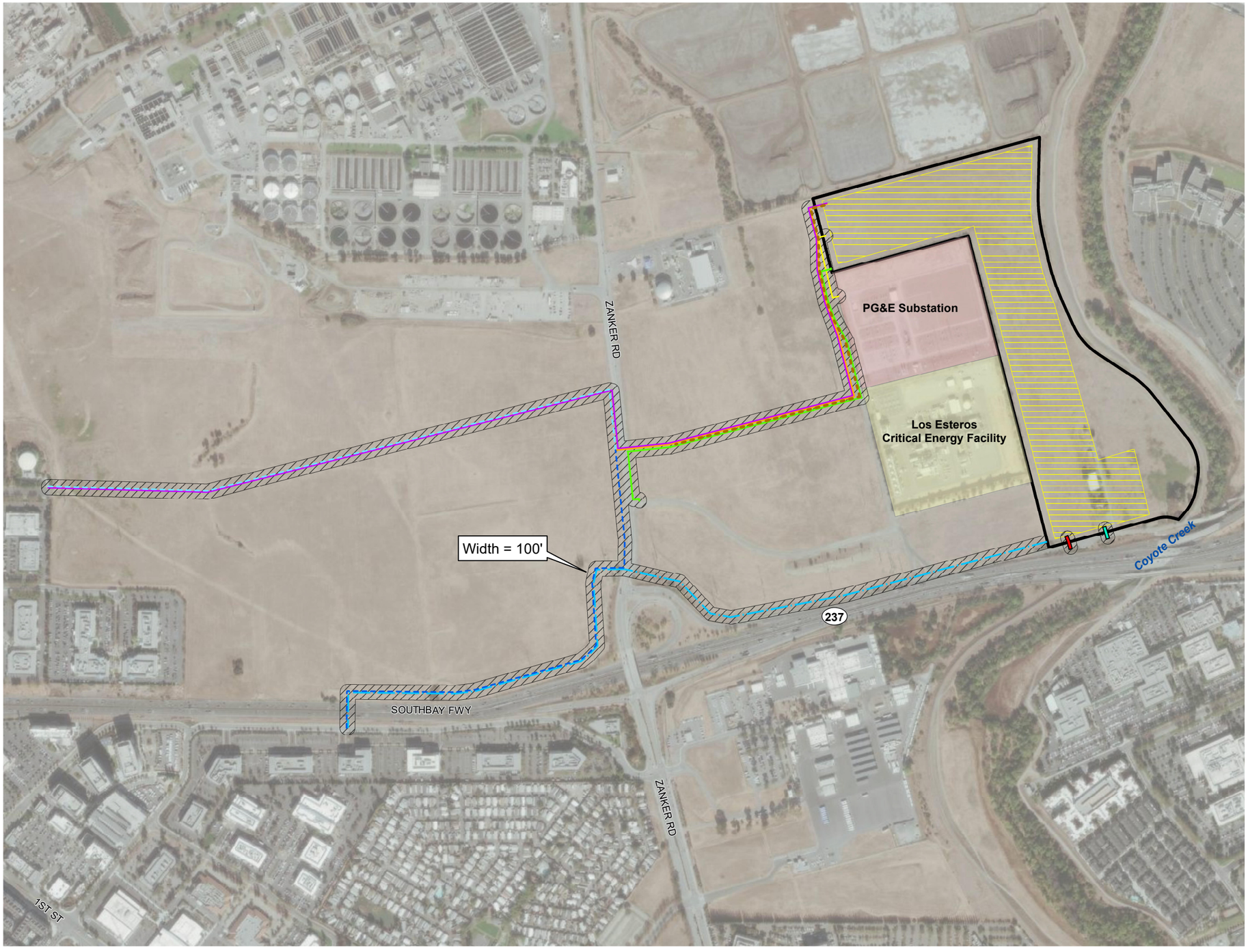
The SJC will be located on an approximately 64.5-acre site. The site has been used historically for farming since the early 1920s, but it is not currently in agricultural use. There were 2 vacant residences and a storage shed/warehouse onsite, which were demolished in 2021 after a fire substantially damaged and thus significantly affected the safety of one of the dwellings. To the north of the project site are the San José/Santa Clara Regional Wastewater Treatment Plant sludge drying beds, to the south is Highway 237, to the west is the LECEF, a PG&E substation (Los Esteros Substation), and to the east is the Coyote Creek riparian corridor.

The nearest airport, the Norman Y. Mineta San José International Airport, is located approximately 3 miles to the south.

2.4 Project Construction

The Applicant will commence construction of the project after any agriculture-related soil contamination is remediated consistent with requirements of the Santa Clara County Environmental Health Department. Possible remediation may include excavation for offsite disposal or capping in place. No offsite staging or laydown areas are proposed, as construction staging will occur on the project site or within the 75-foot construction corridor for linear features (each side of the linear).

Construction of the project is expected to take approximately 17 months. Construction is scheduled to commence in the 4th quarter of 2022 and completed in the 1st quarter of 2024. Construction of the offsite linear features within the offsite infrastructure alignment areas is expected to be completed within the 17-month construction window. Onsite construction is expected to require a maximum of 215 workers (craft and supervisory) per month and an average of 108 workers per month. Maximum and average offsite construction workers are expected to be 72 and 48, respectively. Tables 2-1a and 2-1b presents the construction/demolition workforce by month and classification for onsite and offsite construction.



LEGEND

- Project Site
- Proposed SJC02 Development Area (Estimated Excavation Depth 35-65 ft bgs)
- Estimated Excavation Depth of 15 ft bgs
- Los Esteros Critical Energy Facility
- PG&E Substation
- Proposed Storm Drain
- Proposed Gas Line #1
- Proposed Gas Line #2
- Proposed Sanitary Sewer
- Proposed Reclaimed Water
- Proposed Water Line Route #1
- Proposed Water Line Route #2
- Proposed Water Line Route #3
- Proposed Shared Water Line
- Proposed Electrical Supply Line

IMAGE SOURCE:
ESRI Online 2019

N

0 750 1,500

Approximate scale in feet

Figure 2-7R
Estimated Excavation Depths of Proposed Project
San José Data Center (SJC02)
San José, California

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Table 2-1a. Onsite Construction Workforce by Month and Classification

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Labor Classification																	
Carpenters	0	0	0	1	5	5	5	5	5	8	20	24	24	24	18	12	4
Laborers	12	12	12	12	25	25	25	25	25	25	25	25	25	25	16	12	4
Teamsters	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	3	0
Electricians	0	0	0	1	3	3	6	9	12	24	24	30	30	30	24	18	4
Iron Workers	0	0	0	0	12	12	12	12	12	12	9	9	9	9	9	0	0
Millwrights	0	0	0	0	0	0	0	0	0	0	0	0	4	4	6	6	0
Boilermakers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plumbers	0	0	0	0	6	6	6	6	6	12	12	12	18	18	18	12	4
Pipefitters	0	0	0	0	0	0	0	0	0	4	14	14	14	16	16	10	4
Insulation Workers	0	0	0	0	0	0	0	0	0	0	6	8	12	12	12	12	4
Operating Engineers	6	6	6	6	9	9	9	9	9	5	15	15	7	7	5	4	0
Oilers and Mechanics	1	1	1	1	2	2	2	2	2	4	6	6	8	8	6	6	0
Cement Finishers	0	0	0	0	6	6	6	6	6	6	6	3	3	1	1	0	0
Roofers	0	0	0	0	0	0	0	0	0	0	14	14	14	14	6	3	0
Sheetmetal Workers	0	0	0	0	0	0	0	0	0	2	8	8	12	12	8	8	0
Sprinkler Fitters	0	0	0	0	0	0	0	0	0	6	6	6	6	3	3	0	0
Painters	0	0	0	0	0	0	0	0	0	0	0	4	4	6	6	4	4
Total Craft Labor	24	24	24	26	73	73	76	79	82	113	170	183	195	194	157	110	28
Total Supervision	1	1	1	2	8	12	12	12	20	20	20	20	20	20	12	12	12
Total Staffing	25	25	25	28	81	85	88	91	102	133	190	203	215	214	169	122	40

Table 2-1b. Offsite Construction Workforce by Month and Classification

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Labor Classification																	
Carpenters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Laborers	20	20	20	20	20	20	20	20	20	20	20	20	20	20	10	10	4
Teamsters	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	3	0
Electricians	0	0	0	1	3	3	3	3	3	3	3	3	3	3	3	3	0
Operating Engineers	2	2	4	4	4	4	4	4	4	4	4	4	4	4	2	2	1
Millwrights	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Boilermakers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plumbers	0	0	0	0	0	0	3	3	6	6	6	3	0	0	0	0	0
Pipefitters	0	0	0	0	0	0	0	0	0	4	14	14	14	16	16	10	4
Insulation Workers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oilers and Mechanics	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1
Cement Finishers	0	0	0	0	0	0	0	0	2	2	2	2	3	3	2	0	0
Roofers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheetmetal Workers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sprinkler Fitters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Painters	0	0	0	0	0	0	0	0	0	0	0	4	4	6	6	4	4
Total Craft Labor	28	28	30	31	34	34	37	37	42	46	56	57	55	59	44	34	14
Total Supervision	3	3	3	3	5	10	10	10	10	15	15	15	10	10	10	10	3
Total Staffing	31	31	33	34	39	44	47	47	52	61	71	72	65	69	54	44	17

Table 2-2a. Onsite Construction Equipment by Month

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Description																	
Excavators	4	4	4	4	2	2	2	2	2	0	0	0	0	0	0	0	0
Backhoe	0	0	0	1	2	2	1	1	1	1	1	0	0	0	0	0	0
10-wheel Dump Truck	25	25	25	25	3	2	2	2	2	2	0	0	0	0	0	0	0
Hydraulic Hammer	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Front End Loader	2	2	2	2	3	3	1	1	0	0	0	0	0	0	0	0	0
75-ton Hydraulic Crane	0	0	0	0	0	0	2	2	0	1	1	0	0	0	0	0	0
35-ton Hydraulic Crane	0	0	0	0	0	0	2	2	0	0	0	2	2	0	0	0	0
Fork Lift	0	0	0	1	2	2	2	2	3	3	3	3	3	2	2	1	1
Horizontal Directional Drill Equipment	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Grader	0	0	0	4	4	4	4	2	1	0	0	0	0	0	0	0	0
Compactor	0	0	0	4	4	2	2	2	2	2	2	0	0	0	0	0	0
Water Truck	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
Pick-up Truck	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1
Light Towers	0	0	0	1	1	1	2	2	2	1	1	1	1	0	0	0	0

Table 2-2b. Offsite Construction Equipment by Month

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Description																	
Excavators	4	4	4	4	2	2	2	2	2	0	0	0	0	0	0	0	0
Backhoe	2	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	0
10-wheel Dump Truck	3	3	3	3	3	3	3	3	10	10	2	2	2	1	1	1	0
Concrete Trucks	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	5	0
Hydraulic Hammer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Front End Loader	2	2	2	2	3	3	1	1	1	1	1	1	1	1	1	0	0
75-ton Hydraulic Crane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35-ton Hydraulic Crane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fork Lift	2	2	2	2	2	2	2	2	3	3	3	3	0	0	0	0	1
Horizontal Directional Drill Equipment	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
Grader	0	0	0	4	4	4	4	2	1	0	0	0	0	0	0	0	0
Compactor	0	0	0	4	4	2	2	2	2	2	2	0	0	0	0	0	0
Water Truck	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
Pick-up Truck	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	2
Light Towers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2-3. Onsite/Offsite Construction Trip Generation

Trip Type	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Delivery and Haul Trucks	30	30	60	30	30	60
Workers	215	0	215	0	215	215
Total Construction Traffic	245	30	275	30	245	275

Based on the geotechnical investigation, soils in the upper 3 to 5 feet under the project site consist of granular soils of clayey sands, sands, and gravels with variable clay content, and some clays. Under this layer of soils is lean to fat clays to about 25 feet, with loose to medium dense gravels/sand and loose to medium dense sands with gravel, and low to medium plastic sandy lean clays to about 80 feet below grade. The geotechnical investigation determined that the potential exists for liquefaction-induced settlement, lateral spreading, shallow groundwater (7 to 12 feet below grade), and expansive soils; the foregoing findings that are common in this region.

The geotechnical investigation recommends the placement of 3 to 4 feet of imported fill on the site, with the use of spread footings for building foundations, and densification techniques to address the liquefaction/lateral spreading and expansive soils. The densification technique involves the vertical and horizontal compaction of soils beneath the foundations to reduce the total settlement to acceptable levels. The geotechnical investigation indicates that densification techniques will disturb soils to approximately 40 feet below grade. Figure 2-7R identifies the expected excavation depths at the project site.

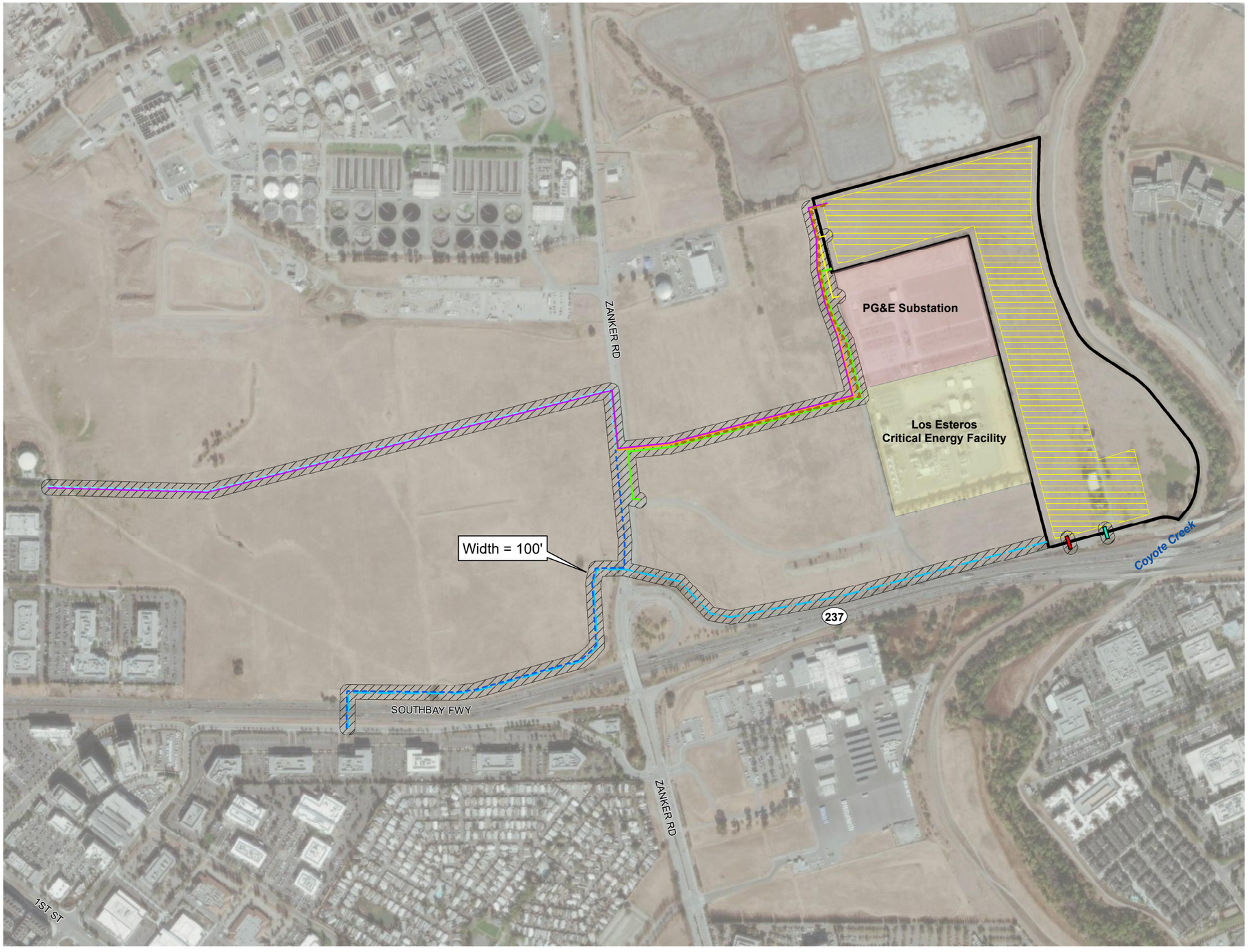
2.5 Project Design Features

The Applicant has incorporated numerous features and best management practices in the project design that are intended to avoid and reduce potential impacts from the project.

These project design features are summarized below and are consistent with best practices and existing regulatory requirements. More detailed project design features are presented in the applicable environmental sections of this Application.

2.5.1 Air and Water Quality

- Minimize fugitive dust generation by watering exposed soils two time per day or as needed.
- Cover truck loads when transporting soil, sand, or other loose materials to or from the site.
- Perform street sweeping to remove all visible mud or dirt track-out onto adjacent public roads at least once per day. The use of dry power sweeping is prohibited.
- Limit onsite vehicle speeds on unpaved surfaces to 15 miles per hour.
- Pave onsite roads and driveways, and sidewalks as soon as possible in the construction schedule. Pour foundations for building pads as soon as possible after grading.
- Limit construction equipment idling times to a maximum 5 minutes, or shut equipment down when not in use.
- Maintain and tune construction equipment in accordance with manufacturer‘s specifications.
- Employ a certified visible emission evaluator to verify that construction equipment is functioning properly.
- Post a publicly visible sign with the telephone number and name of the person to contact regarding dust complaints and the Bay Area Air Quality Management District (BAAQMD) telephone number. The contact person will implement corrective measures, as needed, within 48 hours, and the BAAQMD will be informed of any legitimate complaints received to verify compliance with applicable regulations.



LEGEND

- Project Site
- Proposed SJC02 Development Area (Estimated Excavation Depth 35-65 ft bgs)
- Estimated Excavation Depth of 15 ft bgs
- Los Esteros Critical Energy Facility
- PG&E Substation
- Proposed Storm Drain
- Proposed Gas Line #1
- Proposed Gas Line #2
- Proposed Sanitary Sewer
- Proposed Reclaimed Water
- Proposed Water Line Route #1
- Proposed Water Line Route #2
- Proposed Water Line Route #3
- Proposed Shared Water Line
- Proposed Electrical Supply Line

IMAGE SOURCE:
ESRI Online 2019

N

0 750 1,500

Approximate scale in feet

Figure 2-7R
Estimated Excavation Depths of Proposed Project
San José Data Center (SJC02)
San José, California

JACOBS

\\DC1VS01\GISPROJ\L\LIGHTSPEED\SJDC\MAPS\REPORT\2021\FIG2-7R_EXCAVATIONDEPTHS.MXD 8/10/2021 12:07:08 PM

2.5.2 Biological Resources

- Pre-construction surveys will be performed for biological resources by a qualified biologist (bachelor's degree or higher in biological science field) with demonstrated field experience. The surveys will identify any onsite active nests in trees as well as burrows within 300 feet of areas that could be disturbed during construction. Surveys will be completed at least 14 days prior, and again 24 hours prior, to the initiation of ground disturbance, or as directed by the City. Additional surveys will be performed if construction lapses for more than 15 days between March and July. During this survey, the biologist will inspect vegetation along the perimeter of the project site and offsite linear areas.
- A no-work buffer will be established around any active nests with an appropriate buffer (25 to 250 feet, depending on species) for the nesting species. The buffer widths will be developed by a qualified biologist, based on species' sensitivity to disturbance, planned construction activities, and baseline level of human activity. The buffers will remain in effect until the young have fledged or the nest is no longer active (as confirmed by the qualified biologist). Inactive nests will be removed by the qualified biologist, and unoccupied burrows will be destroyed.
- The biologist will draft a technical memorandum documenting the result of the survey(s) and any designated buffer zones, which will be submitted to the City prior to the start of ground disturbance activities.
- Prior to the commencement of construction, the Applicant will secure the services of a qualified biologist. The biologist will prepare a Worker Environmental Awareness Training program (WEAT) to instruct construction workers of the obligation to protect and preserve valuable biological resources for review by the City. This WEAT will be provided to all construction workers via a recorded presentation and will include a discussion of applicable laws and penalties under the laws; samples or visual aids of resources that could be encountered in the project vicinity; instructions regarding the need to halt work in the vicinity of any potential biological encountered; and measures to notify their supervisor, the Applicant, and the qualified biologist.

2.5.3 Cultural Resources

- Prior to the commencement of construction, the Applicant will secure the services of qualified archaeological and Native American specialists. These specialists will prepare a WEAT program to instruct construction workers of the obligation to protect and preserve valuable archaeological and Native American resources for review by the City. This program will be provided to all construction workers via a recorded presentation and will include a discussion of applicable laws and penalties under the laws; samples or visual aids of resources that could be encountered in the project vicinity; instructions regarding the need to halt work in the vicinity of any potential archaeological and Native American resources encountered; and measures to notify their supervisor, the Applicant, and the specialists.

2.5.4 Paleontological Resources

- The Applicant will secure the services of a qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology, to be on-call prior to the commencement of construction. The paleontologist will be experienced in teaching non-specialists to recognize fossil materials and how to notify in the event of encountering a suspected fossil. If suspected fossils are encountered during construction, the construction workers will halt construction within 50 feet of any potential fossil find and notify the paleontologist, who will evaluate its significance.
- If a fossil is encountered and determined to be significant and avoidance is not feasible, the paleontologist will develop and implement a feasible excavation and salvage plan in accordance with applicable Society of Vertebrate Paleontology standards. Construction work in the immediate area will be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected will be cleaned, repaired, sorted, and cataloged, along with copies of all pertinent field notes, photos, and maps.
- The paleontologist will prepare a paleontological resource monitoring report that outlines the results of the monitoring program and any encountered fossils. The report will be submitted to the Director of

Community Development for review and approval. The report and any fossil remains collected will be submitted to a scientific institution with paleontological collections.

- Prior to the commencement of construction, the Applicant will secure the services of a qualified paleontological specialist. The specialist will prepare a WEAT program to instruct construction workers of the obligation to protect and preserve valuable paleontological resources for review by the City's Director of Community Development. This program will be provided to all construction workers via a recorded presentation and will include a discussion of applicable laws and penalties under the laws; samples or visual aids of resources that could be encountered in the project vicinity; instructions regarding the need to halt work in the vicinity of any potential paleontological resources encountered; and measures to notify their supervisor, the Applicant, and the specialists.

2.6 Facility Operation

The standby generators will be run primarily for testing and maintenance purposes, and otherwise will not operate unless there is an interruption of the electrical supply or pursuant to dispatch for load shedding, demand response and behind the meter RA. . Tables 2-4a and 2-4b present the expected testing and maintenance operations for the diesel and natural gas generators, respectively.

The natural gas generators will operate bi-weekly for approximately 20 minutes. In the event the facility is dispatched to operate the engines to provide load shedding, demand response and behind-the-meter RA, the generators will not require maintenance and testing operation until the next scheduled bi-weekly testing event.

Table 2-4a. Standby Diesel Generator Expected Testing and Maintenance Events (per Standby Generator)

Maintenance Event	Duration		Load Factor	Annual Operations
	Frequency	Hours		Hours/Year
Monthly Generation[a]	8	0.42	100%	3.4
Quarterly Generation[b]	3	0.42	100%	1.3
Annual Generation	1	2	100%	2
3-Year Medium Voltage Breaker/Transformer Testing	1	4	100%	4
Contingency Testing[c]	-	1.6	100%	1.6

[a] Quarterly and annual testing is counted as monthly testing.

[b] Annual testing counts as quarterly testing.

[c] The contingency testing was included to provide standby generator operations to support unscheduled maintenance/testing requirements.

Note:
- = not applicable

Table 2-4b. Standby Natural Gas Generator Expected Testing and Maintenance Events (per Standby Generator)

Maintenance Event	Duration		Load Factor	Annual Operations
	Frequency	Hours		Hours/Year
Bi-Weekly Testing	26	0.333	75-90%	8.66

2.7 Alternate Standby Generation Technologies Considered But Rejected

The purpose of the standby generators is to provide a high degree of electrical reliability, which requires installation of redundant systems (i.e., twice as much generating capability as necessary to operate the facility). The natural gas and diesel electrical generators have a long and successful history of satisfying the needs of emergency electrical needs of critical infrastructure. Even though there will be no significant, unmitigated impacts from the project due to the features incorporated into the project design and the incorporation of identified feasible mitigation measures (as described throughout this SPPE Application, where appropriate), the Applicant considered alternate standby generation technologies as potential options. The technologies considered included alternative-fueled generators (propane and gasoline), fuel cells, renewable generation, and storage. However, none of the alternatives can meet the basic project objectives in a feasible, cost-effective manner, nor are they necessary to lessen any of the impacts from the project.

2.7.1 Alternative Fuel Sources

The use of alternative-fueled generators included consideration of the use of propane- and gasoline-standby generators. The proposed administrative standby generators include sufficient storage to support 48 hours of continuous operation and multiple contracts with fuel suppliers provides added resiliency. Storage of diesel fuel does not require vapor control systems to protect public health and safety and can be stored for indefinite periods of time. Diesel fuel is widely used in automobiles, emergency generators supporting other critical infrastructure (such as hospitals, police stations, or communication systems), and construction equipment. Diesel fuel accounted for 21 percent of the fuels consumed in the United States transportation sector.[2] Diesel fuel has a lower vapor pressure as compared to other fuels (e.g., gasoline, propane), making it inherently safer to use and store as compared to alternative fuel sources. In contrast, propane gas-fired generators are available in 1.25 and 0.5-MW units; however, designing and installing an onsite propane storage system would not be cost effective and would require a significantly larger project site to accommodate the equipment required to pressurize and store the fuel.

The SJC site is uniquely situated in that it has access to a natural gas supply from two separate connections to two different PG&E distribution pipelines (Line 101 and Line 109). These redundant connections provide additional redundancy to this fuel supply and minimize the potential supply interruption due to unforeseen events, significantly increasing assurances of reliability.

2.7.2 Alternative Technologies

The Applicant considered whether alternative technologies could provide the same level of reliability and consistency as the proposed standby generators. Fuel cells convert chemical energy, in the form of hydrogen or natural gas, to electricity with water, heat, and carbon dioxide as the possible by-products. Standby fuel cells are configured in ‘stacks’ of units, allowing the fuel cell output to be scalable up to utility scales.[3] Natural gas fuel cells will require a substantially greater area than is required for the standby natural gas and diesel generators on an already physically constrained site due to the protected Coyote Creek riparian area. The use of hydrogen as a potential fuel source requires hydrogen storage at significant pressure and storage is a challenge for stationary and portable applications.[4] Hydrogen is not considered feasible in similar project applications.

Due to the intermittent nature, the use of renewable generation sources (wind, hydroelectric, or solar) on their own would not satisfy the project’s need for reliable standby generation. The space and resource requirements for the expected load of 77 MW of renewable power and their intermittent nature make such applications infeasible for this project and site. Renewable generation resources, such as solar or wind coupled with a battery installation, would require significantly more space than that currently operated by

[2] https://www.eia.gov/energyexplained/index.php?page=diesel_use
[3] https://www.energy.gov/sites/prod/files/2014/10/f19/ftco_early_mkts_fc_backup_power_fact_sheet.pdf
[4] https://www.energy.gov/eere/fuelcells/hydrogen-storage

the standby generators; would not fit on the current project site; and would not avoid or minimize any potentially significant impacts.

2.8 Project Objectives

The Applicant's project objectives are as follows:

- Meet the continuing need for a data center to support the San José region's growing business and work force population as well as its growth as a center of innovation consistent with San José's planned land use vision.
- Construct and operate a data center that maximizes the use of the project site to house computer servers, supporting equipment, and associated administrative office uses in an environmentally controlled structure with redundant subsystems (cooling, power, network links, storage, fire suppression, etc.).
- Locate the data center on property long-planned for industrial uses that is in proximity to existing circulation and utility infrastructure, a reliable large power source, and emergency response access, and on a site capable of being protected, to the maximum extent feasible, from security threats, natural disasters, and similar events.
- Design the proposed data center such that it can be provided with operational electric power via an electric 115/230-kilovolt (kV) substation, and efficiently extend, connect to or otherwise install other utility infrastructure to adequately serve the project, including water, storm drainage, sanitary sewer, electric, natural gas, and telecommunications, as well as new roadway and bike trail improvements.
- Ensure the data center achieves reduced access latency (defined as the time it takes to access data across a network).
- Incorporate reliable, commercially available, and feasible backup generators to ensure uninterrupted power during utility outages, interruptions, or failures, with back-up generation deployed in redundant configurations to achieve a 99.999 percent reliability factor.
- Incorporate use of renewable fuels as primary fuel for backup generators.
- Incorporate, as feasible, environmentally sustainable features into the project, such as bird-friendly building design components and the creation of an environmental buffer zone along Coyote Creek.

3.1 Aesthetics

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

Environmental checklist established by CEQA Guidelines, Appendix G.

3.1.1 Setting

The San José Data Center (SJC) will be located within the City of San José on an approximately 64.5-acre site and will consist of two data center buildings totaling over approximately 396,914 square feet of space. The project will include 224 0.45-megawatt (MW) natural gas-fired generators to provide electrical power to support the electrical load of the data center buildings during utility outages or certain onsite electrical equipment interruptions or failures. Additionally, the use of the natural gas generators will enable the SJC to provide grid support through load shedding, demand a response, and behind-the-meter Resource Adequacy (RA) ancillary services. In addition to these generators, the project will include two administrative Tier IV diesel-powered generators, rated at 1.25 MW and 0.5 MW, to support administrative functions during an interruption in the normal delivery of electrical power from the utility.

The project site has been used historically for farming since the early 1920s but is not currently in agricultural use and no dwellings or structures exist onsite[1]. To the north of the project site are the San José/Santa Clara Regional Wastewater Treatment Plant sludge drying beds, to the south is Highway 237, to the west is the Los Esteros Critical Energy Facility (LECEF), a PG&E substation, and to the east is Coyote Creek. The project is anticipated to begin construction in the 4th quarter of 2022, with operations beginning in the 1st quarter of 2024

There are no unique or high-quality visual resources on the project site itself or within the offsite infrastructure alignment areas, although the project site is adjacent to the Coyote Creek riparian corridor.

3.1.2 Existing Landscape Setting and Viewer Characteristics

The SJC project site is located at 1595 and 1657 Alviso-Milpitas Road, San José, California. The closest buildings on adjacent lands range in size from 2 to 6 stories high. The adjacent power plant (LECEF) is constructed of concrete and metal. Overall, the visual character of the project site and surrounding area can be characterized as industrial and agricultural in nature (with the WWTP, LECEF, sludge drying beds, and PG&E substation nearby), although the Coyote Creek riparian corridor is also adjacent to the site.

[1] There were 2 vacant residences and a storage shed/warehouse onsite, which were demolished in 2021 after a fire significantly affected the safety of one of the dwellings.

Sources of existing light and glare are abundant in the industrial environment of the power plant to the east and the WWTP to the north of the site. These sources include street lights, parking lot lights, security lights, vehicular headlights, internal building lights, and reflective building surface and windows.

As identified in the Tree Inventory Report (City of San José 2017), there are approximately 195 trees on the perimeter of the project site (95 on the project site). The trees on the project site are primarily located along the perimeter of the site, with a number of trees located adjacent to the former buildings.

Regional Context. The project site, the offsite infrastructure alignment areas, and the surrounding area are relatively flat; as a result, the site is viewable primarily from the adjacent parcels, as well as from Ranch Drive and Highway 237 to the south. The project site is not readily visible from Zanker Road or from the eastern side of Coyote Creek (City of San José 2017).

No designated scenic vistas or view corridors are located within the City based on a review of the City's General Plan Scenic Corridors Diagram.[2] Views to the east of the project site are of the foothills; views west of the project site include the San Francisco Bay, Moffett Field, and the City of San José, which are partially obscured by existing buildings and landscaping trees located on adjacent properties.

The project site is mostly screened from views from Coyote Creek by two features: existing trees adjacent to the creek, and raised levees on each side of its banks. The project site is lower in elevation than the levee: thus, the views are limited.

The project site is not within a scenic viewshed or along a scenic highway designated by the California Department of Transportation Scenic Highway Program (Caltrans 2018).

The offsite infrastructure alignment areas are also not located within any designated scenic vistas or view corridors.

3.1.3 Environmental Impacts and Mitigation Measures

Aesthetics Impacts

a) Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. No designated scenic vistas or view corridors are located within the City of San José. Views of the foothills are present to the east of the project site, and views west of the project site include the San Francisco Bay, Moffett Field, and the City of San José, which partially are obscured by existing buildings and landscaping trees. The proposed project's tallest feature will be approximately 31 feet tall, which will only obscure views close to onsite structures. Therefore, views of scenic areas will not be significantly impacted. Offsite infrastructure will be located in areas that do not contain any designated scenic vistas or view corridors and in any event, this infrastructure will be located underground; therefore, it will not result in impacts to scenic vistas. The project will have a less than significant impact scenic vistas.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less than Significant Impact. The project site, the offsite infrastructure alignment areas, and the surrounding area are relatively flat. As a result, views of the project site are limited to the immediate surrounding area, which is primarily industrial in character. The project will not be readily visible from the viewsheds[3] of any of the visual resources in the City of San José identified by the San José General Plan Environmental Impact Report because of existing development, vegetation, and distance, and there are no scenic vistas within the City (City of San José 2011). The project site is

[2] https://www.sanjoseca.gov/DocumentCenter/View/7466

[3] The Santa Clara Valley hills and mountains that frame the Valley floor, the baylands, and the urban skyline

not within a scenic viewshed or along a scenic highway designated by Caltrans. No rock outcroppings or historical buildings[4] exist onsite and thus none will be substantially damaged by the project. Moreover, the project will be compatible with existing industrial land uses nearby; will include thoughtful site planning and design elements; and will retain onsite trees, as feasible. Therefore, the project will have a less than significant impact on scenic resources. Furthermore, compliance with the City's riparian offset requirements for the Coyote Creek Riparian Corridor will further ensure that the project does not impair this valuable resource.

Visible Water Vapor Plumes

When internal combustion engines (e.g., generators) operate during conditions of low ambient temperature and high relative humidity, the water vapor in the exhaust plume condenses as it mixes with the cooler ambient air, resulting in formation of a visible water vapor plume. This is similar to when the moisture-laden air in a person's breath on a cold day is chilled to the point where the water vapor condenses into tiny droplets of liquid water, forming a visible cloudy fog. Formation of visible plumes typically occurs on cool, humid days when the outdoor air is at or near saturation.

Internal combustion engines, such as the proposed 224 natural gas generators and two administrative diesel generators, produce high temperature exhausts that will disperse quickly, thereby minimizing the probability that visible plumes will form. Typically, the ambient conditions that produce visible plumes (low ambient temperatures and high relative humidity) are unlikely to coincide with the testing, maintenance, or operation of the generators. Emergency operation of the generators is more likely to occur during warm ambient conditions when electrical demand is at its highest, not during cooler ambient conditions that tend to increase the potential for visible plume formation. As such, the formation of visible plumes from the project's generators is unlikely. The heating, ventilation, and air conditioning system uses a fluid cooler that consumes water. However, these coolers are only operated when ambient air temperature exceed 75 degrees Fahrenheit (projected to occur less than 600 hours per year), precluding the formation of significant visual plumes. In addition, there are no unique, quality visual resources on the project site itself or the vicinity. Less than significant impact on visual resources will occur pertaining to visible plumes.

c) Would the project in non-urbanized areas substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. The project site is in an already urbanized area, which is characterized as primarily industrial in nature. As discussed in Section 3.11, Land Use and Planning, the project is consistent with applicable zoning and other regulations governing scenic quality; therefore, no significant aesthetic impacts will occur. Moreover, the buildings and site improvements will be subject to the City's design review process to verify that the project will not adversely and significantly affect the visual quality of the project site and vicinity and will be required to conform to current industrial design guidelines and standards. The project will be subject to review by the City's Planning Division, which will confirm that the project conforms to San José's applicable adopted Design Guidelines. The guidelines were developed to support community aesthetic values, preserve neighborhood character, and promote a sense of community and place throughout the City. Therefore, implementation of the project will not have the potential to substantially degrade the existing visual quality or character of the site or its surroundings.

San José's design review process will be used to verify that the project will construct buildings with similar height and density to those in the surrounding industrial development to confirm land use

[4] Per the cultural resources report, the buildings are historical in nature due to their respective age but are not of cultural significance and are not considered cultural resources for purposes of CEQA. Further, the buildings onsite have since been demolished due to a fire in 2021.

compatibility. The height of the tallest proposed structure will be approximately 31 feet above ground surface (the fluid coolers). The façades of the proposed data center structures will consist primarily of metal paneling in white. Each of the data center structures will have a storefront that will be constructed of clear anodized aluminum and grey glass. The enclosures for the generators will consist of powder-coated metal panels in grey. The design of the proposed buildings incorporates the use of white and silver tones and varied textures, along with accent elements such as an exposed electrical equipment. The design of the project will assist in creating visual simplicity with a white structure and exposed electrical equipment, which will break up the building's facade.

The proposed buildings will be similar in scale to the surrounding industrial structures. The façades of the proposed buildings will be different than, but visually similar to, the surrounding land uses, which primarily include industrial structures. The proposed buildings and surface parking lot design will be compatible with the visual character of the surrounding area. Overall, the project will be consistent with adjacent industrial and commercial development in terms of visual character and quality. Additionally, landscaping along the southern property line will help to blend the project into the nearby riparian corridor.

Demolition, Excavation, and Construction Activities

The project will involve construction activities of two new, approximately 31-foot-high data center buildings with supporting parking, an electrical substation, and 224 natural gas generators and two administrative Tier IV diesel generators located adjacent to the data center buildings, as well as construction of offsite infrastructure (utilities and roadways) and a bike trail connection. During construction, the project site will be enclosed by the security fencing. Visual impacts during construction will be temporary and will cease upon completion of construction activities. Therefore, the temporary construction-related activities of the project will not substantially degrade the existing visual quality or character of the project site or its surroundings.

There are no significant impacts to aesthetics due to the incorporation of the project design features described; therefore, no mitigation measures are required. As noted herein, the buildings and site improvements will be subject to the City's design review process to confirm that the project will not adversely and significantly affect the visual quality of the area and will conform to current applicable architectural and landscaping standards.

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

Less than Significant Impact. The project will include outdoor security and wayfinding lighting on the project site located along walkways, driveways, and entrance areas, and in surface parking areas, comparable to the existing ambient lighting in the surrounding area. The project will increase the amount of lighting on the project site but will not increase the overall level of illumination in the area, given the adjacent industrial developments and the fact that the project will be required to adhere to all applicable lighting standards. The design of exterior facades of the proposed buildings will be required to adhere to applicable standards to confirm that impacts remain less than significant, which will be verified during the City's design review process. Typical design requirements include directional or shielded lights, or both, to minimize brightness and glare of the lights, which will be required as part of the project. In addition, the exterior surfaces of the proposed buildings will use low-glare glazing and will not be a significant source of glare during daytime hours. Lastly, signage will be subject to the City's approval process and consistent with applicable regulations. Design features will be included to minimize light impacts on the adjacent riparian corridor, Therefore, there are no significant impacts to the area as a result of the additional lighting needed for the SJC02 project.

Proposed Mitigation Measures: None.

3.1.4 References

California Department of Transportation (Caltrans). 2018. *Scenic Highways*. Accessed January 30, 2019. http://www.dot.ca.gov/design/lap/livability/scenic-highways/index.html.

City of San José (City). 2011. *Draft Program Environmental Impact Report for the Envision San José 2040 General Plan*. June. Accessed June 10, 2019. http://www.sanjoseca.gov/index.aspx?NID=4974.

City of San José (City). 2017. *City of San Jose Draft Environmental Impact Report, 237 Industrial Center Project*. June. Accessed November 13, 2019. http://www.sanjoseca.gov/index.aspx?nid=6072.

3.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. In its discretion, the California Energy Commission (CEC) has determined that utilizing the relevant air quality management district significance criteria for purposes of this Initial Study is appropriate. Accordingly, this analysis of the project's potential air quality impacts, and the associated findings presented in this section, are based on comparisons to thresholds of significance established by the Bay Area Air Quality Management District (BAAQMD) for California Environmental Quality Act (CEQA) analysis (BAAQMD 2017c).

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable Federal or State ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental checklist established in Appendix G of the *2019 CEQA Statute & Guidelines* (AEP 2019).

3.3.1 Setting

The San José Data Center (SJC) will be located within the City of San José on an approximately 64.5-acre site and will consist of two data center buildings totaling over approximately 396,914 square feet of space. The project will include 224 0.45-megawatt (MW) natural gas-fired generators to provide electrical power to support the electrical load of the data center buildings during utility outages or certain onsite electrical equipment interruptions or failures. Additionally, the use of the natural gas generators will enable the SJC to provide grid support through load shedding, demand response, and behind-the-meter Resource Adequacy (RA) ancillary services. In addition to these generators, the project will include two administrative Tier IV diesel-powered generators, rated at 1.25 MW and 0.5 MW, to support administrative functions during an interruption in the normal delivery of electrical power from the utility.

The project site has been used historically for farming since the early 1920s but is not currently in agricultural use and no dwellings or structures exist onsite[1]. To the north of the project site are the San José/Santa Clara Regional Wastewater Treatment Plant sludge drying beds, to the south is Highway 237, to the west is the Los Esteros Critical Energy Facility (LECEF), a PG&E substation, and to the east is Coyote Creek. The project is anticipated to begin construction in the 4th quarter of 2022, with operations beginning in the 1st quarter of 2024.

Air quality in the San Francisco Bay Area Air Basin (SFBAAB) is better than air quality in most other populated areas in California, including the South Coast, San Joaquin Valley, and Sacramento regions. This is attributed to a more favorable climate, cooler temperatures, and better atmospheric mixing as a result of coastal winds.

[1] There were 2 vacant residences and a storage shed/warehouse onsite, which were demolished in 2021 after a fire significantly affected the safety of one of the dwellings.

Proximity to the Pacific Ocean and the San Francisco Bay has a moderating influence on the climate in the project vicinity. The portion of the Santa Clara Valley where the project site is located is bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the southwest, and the Diablo Range to the east. The surrounding terrain greatly influences winds in the Santa Clara Valley, resulting in a prevailing wind that flows along the valley's northwest-southeast axis.

Over time, air quality improvements have occurred in the SFBAAB, but violations and exceedances of the state ozone and particulate matter standards continue to persist, posing challenges to state and local air pollution control agencies (CARB 2013). Pollutants in the air can cause health problems, especially for children, the elderly, and people with heart or lung problems. Healthy adults may experience symptoms during periods of intense exercise. Pollutants can also cause damage or harm vegetation, animals, and property.

This section details the project's anticipated air pollutant emissions and their potential to contribute to air quality and public health impacts. Details on the project's greenhouse gas (GHG) emissions and their potential to contribute to climate change impacts can be found in Section 3.8.

3.3.1.1 Overview of Existing Air Quality

California's air quality is evaluated based on an area's compliance with ambient air quality standards established by the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB). EPA and CARB have established air concentration-based ambient air quality standards to protect public health and welfare. Compliance is based on ambient air quality monitoring results, typically conducted by federal, state, and local regulatory agencies, with measurements taken using a variety of established techniques.

Air Quality Standards

The EPA has established National Ambient Air Quality Standards (NAAQS) for the following seven pollutants, termed criteria pollutants: ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and airborne lead. Similarly, CARB has established California Ambient Air Quality Standards (CAAQS) for the seven pollutants listed herein and, in addition, for visibility-reducing particles (VRP), sulfates, hydrogen sulfide, and vinyl chloride. In general, the CAAQS are more stringent than the corresponding NAAQS, with varying averaging times and statistics used to compare measured or modeled concentrations to ambient standards. The standards currently in effect in California are shown in Table 3.3-1a.

Table 3.3-1a. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[a]	NAAQS[b]	
			Primary[c]	Secondary[d]
Ozone	1 hour 8 hours	0.09 ppm 0.070 ppm	-- 0.070 ppm	-- 0.070 ppm
CO	1 hour 8 hours	20 ppm 9.0 ppm	35 ppm 9 ppm	-- --
NO_2	1 hour Annual Arithmetic Mean	0.18 ppm 0.030 ppm	0.100 ppm[e] 0.053 ppm	-- 0.053 ppm
SO_2	1 hour 3 hours 24 hours Annual Arithmetic Mean	0.25 ppm -- 0.04 ppm --	0.075 ppm[f] -- 0.14 ppm[g] 0.030 ppm[g]	-- 0.5 ppm -- --
PM_{10}	24 hours Annual Arithmetic Mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 --	150 µg/m^3 --
$PM_{2.5}$	24 hours Annual Arithmetic Mean	-- 12 µg/m^3	35 µg/m^3 12 µg/m^3	35 µg/m^3 15 µg/m^3

Table 3.3-1a. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[a]	NAAQS[b]	
			Primary[c]	Secondary[d]
Lead	30-Day Average Calendar Quarter Rolling 3-Month Average	1.5 µg/m^3 -- --	-- 1.5 µg/m^3 0.15 µg/m^3	-- 1.5 µg/m^3 0.15 µg/m^3
VRP	8 hours	[h]	--	--
Sulfates	24 hours	25 µg/ m^3	--	--
Hydrogen Sulfide	1 hour	0.03 ppm	--	--
Vinyl Chloride	24 hours	0.01 ppm	--	--

Source: CARB 2016.

[a] CAAQS for ozone, CO, SO_2 (1- and 24-hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and VRP) are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] NAAQS (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in 1 year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1 on average over 3 years. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[d] Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[e] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.100 ppm.

[f] To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.075 ppm.

[g] The existing 24-hour and annual primary standards were revoked. The 1971 SO_2 national standards (24-hour and annual arithmetic mean) remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards. In these areas, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[h] Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent.

Notes:

-- = No standard has been adopted for this averaging time

µg/m^3 = microgram(s) per cubic meter

ppm = part(s) per million

Attainment Status

The EPA and CARB classify areas as being in attainment or nonattainment with the NAAQS or CAAQS for each criteria pollutant. A region that meets the NAAQS or CAAQS for a pollutant is designated as being in “attainment” for that pollutant. If the region does not meet the NAAQS or CAAQS for a pollutant, it is designated as “nonattainment” for that pollutant. An area that was previously designated as a nonattainment area but has recently met the standard and has been reclassified by EPA as “attainment with a maintenance plan” is a “maintenance” area. If monitoring data are insufficient, an area may be deemed “unclassified” for a pollutant standard, but this designation is typically considered the same as attainment for regulatory purposes.

The San José Data Center (SJCor project) would be located in the City of San José, California, under the jurisdiction of the BAAQMD. Table 3.3-1b summarizes attainment status for the criteria pollutants in the SFBAAB with regard to both the federal and state standards.

Table 3.3-1b. Attainment Status for the San Francisco Bay Area Air Basin

Pollutant	Averaging Time	Federal Designation	State Designation
Ozone	1 hour 8 hours	-- Marginal Nonattainment	Nonattainment Nonattainment
CO	1 hour 8 hours	Maintenance[a] Maintenance	Attainment Attainment
NO_2	1 hour Annual Arithmetic Mean	Attainment Attainment	Attainment Attainment
SO_2	1 hour 3 hours 24 hours Annual Arithmetic Mean	Attainment Attainment Attainment Attainment	Attainment -- Attainment --
PM_{10}	24 hours Annual Arithmetic Mean	Attainment --	Nonattainment Nonattainment
$PM_{2.5}$	24 hours Annual Arithmetic Mean	Nonattainment[b] Attainment	-- Nonattainment
Lead	30-day Average Calendar Quarter Rolling 3-month Average	-- Attainment Attainment	Attainment -- --
VRP	8 hours	--	Unclassified
Sulfates	24 hours	--	Attainment
Hydrogen Sulfide	1 hour	--	Unclassified
Vinyl Chloride	24 hours	--	No information available

Sources: EPA 2021b; CARB 2021a; BAAQMD 2017a.

[a] The CO maintenance period expired on June 1, 2018. The area is still listed as maintenance in the EPA Greenbook.

[b] On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key State Implementation Plan requirements as long as monitoring data continue to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as “nonattainment” for the national 24-hour $PM_{2.5}$ standard until such time as the BAAQMD submits a “redesignation request” and a “maintenance plan” to EPA, and EPA approves the proposed redesignation.

Note:

-- = No standard has been adopted for this averaging time

Given its nature as a data center, the project would not emit measurable quantities of lead, VRP, sulfates, hydrogen sulfide, or vinyl chloride. Therefore, these pollutants are not addressed in further detail in this section.

Existing Conditions

Table 3.3-1c provides background concentrations of criteria pollutants for the previous 3 years as measured in ambient air at certified monitoring stations near the project site. To evaluate potential air quality impacts as a result of the project, modeled air concentrations attributable to the project are combined with appropriate background concentrations and compared to the applicable NAAQS and CAAQS. If the background concentrations alone exceed the applicable NAAQS and CAAQS, modeled air concentrations attributable to the project may instead be compared directly to Significant Impact Levels (SILs), if required by air district regulations.

Table 3.3-1c. Summary of Background Concentrations Measured in Ambient Air[a]

Pollutant	Averaging Time	Units	2018	2019	2020
Ozone	1 hour	ppm	0.078	0.095	0.106
	8 hours	ppm	0.061	0.081	0.085
CO	1 hour	ppm	2.5	1.7	1.8
	8 hours	ppm	2.1	1.3	1.5
NO_2	1 hour (maximum)	ppb	86	60	52
	1 hour (98th percentile)	ppb	59	52	45
	Annual Arithmetic Mean	ppb	12.04	10.63	9.65
SO_2	1 hour (maximum)	ppb	6.9	14.5	2.9
	1 hour (99th percentile)	ppb	3.0	2.0	2.0
	3 hours[b]	ppb	6.9	14.5	2.9
	24 hours	ppb	1.1	1.5	0.8
	Annual Arithmetic Mean	ppb	0.21	0.14	0.17
PM_{10}	24 hours	$\mu g/m^3$	115	75	134
	Annual Arithmetic Mean[c]	$\mu g/m^3$	23.1	19.1	--
$PM_{2.5}$	24 hours (98th percentile)	$\mu g/m^3$	73	21	56
	Annual Arithmetic Mean	$\mu g/m^3$	12.9	9.1	11.5

Source: EPA 2021a; CARB 2021b

[a] Unless otherwise noted, background values were collected from Monitor Site ID 060850005 located at 158B Jackson Street in San Jose, California, as reported by EPA on the Monitor Values Report Website (https://www.epa.gov/outdoor-air-quality-data/monitor-values-report).

[b] In the absence of monitored values, the 1-hour maximum background was conservatively used as background for the 3-hour averaging period.

[c] Background values were collected from the monitoring site located at 158B Jackson Street in San Jose, California, as reported by CARB in the iADAM Database (https://www.arb.ca.gov/adam/).

Notes:

-- = Monitoring result not available for the desired time period

ppb = part(s) per billion

In addition to the criteria pollutants, EPA and CARB also regulate emissions of hazardous air pollutants (HAPs) and toxic air contaminants (TACs). The term TAC is more commonly used in California. TAC emissions are known or suspected to cause cancer or other serious health effects, such as reproductive effects, birth defects, or adverse environmental effects. Relevant criteria pollutants and TACs are described in the following subsections, including their potential health effects.

Ozone

Ozone is a photochemical oxidant that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_X) react in the presence of ultraviolet sunlight. The principal sources of VOCs and NO_X, often termed ozone precursors, are combustion processes (including motor vehicle engines) and evaporation of solvents, paints, and fuels. Exposure to levels of ozone above the current ambient air quality standards can lead to human health effects such as lung inflammation, lung tissue damage, and impaired lung functioning. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms. The greatest risk for harmful health effects belongs to outdoor workers, athletes, children, and others who spend greater amounts of time outdoors during smoggy periods. Elevated ozone levels can reduce crop and timber yields, as well as damage native plants. Ozone can also damage materials such as rubber, fabrics, and plastics.

Carbon Monoxide

CO is a colorless, odorless gas formed by incomplete combustion of fossil fuels. Exposure to CO near the levels of the NAAQS and CAAQS can lead to fatigue, headaches, confusion, and dizziness.

Nitrogen Dioxide

NO_2 is a byproduct of combustion sources such as on-road and off-road motor vehicles or stationary fuel combustion sources. The principle form of nitrogen oxide produced by combustion is nitric oxide (NO); however, NO reacts quickly with oxygen to form NO_2, creating a mixture of NO and NO_2 commonly called NO_X. Exposures to NO_2 and pollutants from vehicle exhaust are associated with respiratory symptoms, episodes of respiratory illness, and impaired lung function.

Sulfur Dioxide

SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Effects from SO_2 exposures at levels near the 1-hour standard include bronchoconstriction accompanied by symptoms that may include wheezing, shortness of breath, and chest tightness, especially during exercise or physical activity.

Particulate Matter

Particulate matter (PM_{10} and $PM_{2.5}$) includes a wide range of solid or liquid particles, including smoke, dust, aerosols, and metallic oxides. Extensive research indicates that exposure to ambient PM_{10} and $PM_{2.5}$ concentrations exceeding current air quality standards is associated with increased risk of hospitalization for lung- and heart-related respiratory illnesses, including emergency room visits for asthma. Particulate matter exposure is also associated with increased risk of premature death, especially in the elderly and people with pre-existing cardiopulmonary disease. Studies have shown the association between particulate matter exposure and reduced lung function and increased respiratory symptoms and illnesses in children.

Toxic Air Contaminants

The health effects associated with TACs are quite diverse, and generally are assessed locally, rather than regionally. TACs could cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term effects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches (BAAQMD 2017c). Numerous other health effects also have been linked to exposure to TACs, including heart disease, Sudden Infant Death Syndrome, respiratory infections in children, lung cancer, and breast cancer (OEHHA 2015).

3.3.1.2 Regulatory Background

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

Federal

Federal air quality policies are regulated through the Federal Clean Air Act (CAA). The U.S. Congress adopted the CAA in 1970, and passed amendments to the CAA in 1977 and 1990. In 1990, the CAA was amended to strengthen the regulation of both stationary and mobile emission sources. As required by the federal CAA, NAAQS have been established for the criteria pollutants, as described previously.

The 1977 CAA amendments require each state to develop and maintain a State Implementation Plan (SIP) for each nonattainment criteria pollutant. The SIP serves as a tool to help avoid and minimize emissions of nonattainment criteria pollutants and their precursor pollutants, and to achieve compliance with the NAAQS. The following state regulatory discussion provides more details on the applicable local air quality plans and SIP.

EPA has promulgated federal regulations for permitting the construction and operation of emission sources that qualify as “major” sources of emissions, as defined in the applicable rules. The EPA has delegated authority to states and local permitting authorities to write regulations and operate federally

enforceable permitting programs in most states. Federal regulations for pre-construction review and permitting of new and modified major sources include nonattainment new source review (NSR) requirements, applicable to major sources of nonattainment pollutants and/or their precursors in nonattainment areas, and prevention of significant deterioration (PSD) requirements, applicable to any major sources of attainment pollutants or their precursors. Title V of the federal CAA requires the EPA to establish a national operating permit program for major sources of emissions. In states with delegated authority (like California), these permits are referred to as Part 70 or Title V permits.

In addition to the criteria pollutants, EPA also regulates emissions of HAPs. HAPs or air toxic emissions are pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. Controlling air toxic emissions became a national priority with the passage of the CAA amendments in 1990, when the U.S. Congress mandated that the EPA regulate 188 air toxics. National Emission Standards for Hazardous Air Pollutants (NESHAPs) regulate HAPs at major emission sources, aiming to protect the public health with an ample margin of safety and to prevent any significant and adverse environmental effects.

For mobile sources, the EPA has assessed the list of the 188 HAPs in its rule titled Control of Hazardous Air Pollutants from Mobile Sources (*Federal Register*, Vol. 72, No. 37, page 8430, February 26, 2007), and identified the high-priority mobile source air toxics (MSATs). MSATs are pollutants with significant emission contributions from mobile sources, which are among the national and regional-scale cancer risk drivers in the 1999 National Air Toxics Assessment. In this rule, the high-priority MSATs identified by EPA are acrolein, benzene, 1,3-butadiene, diesel particulate matter and diesel exhaust organic gases (collectively referred to as DPM), formaldehyde, naphthalene, and polycyclic organic matter. The control of HAPs from mobile sources requires controls to dramatically decrease MSAT emissions (for example, by using cleaner fuels and cleaner engines).

EPA regulations applicable to the project's proposed natural gas-fired generators (also referred to as the Enchanted Rock 21.9L engines) include the NESHAP for reciprocating internal combustion engines (RICE), as presented in 40 Code of Federal Regulations (CFR) 63, Subpart ZZZZ, and the New Source Performance Standards (NSPS) for stationary spark ignition internal combustion engines, presented in 40 CFR,60, Subpart JJJJ. Per 40 CFR 63.6590(c)(1), the RICE NESHAP requirements are satisfied by meeting the NSPS requirements of 40 CFR 60, Subpart JJJJ.

Because the Enchanted Rock 21.9L engines will be used for load shedding, demand response or behind the meter RA ancillary services in addition to maintenance and testing and emergency purposes,the engines will also be required to comply with the emission limits in Table 1 of 40 CFR 60, Subpart JJJJ for non-emergency engines firing natural gas, greater than 500 horsepower (hp), and manufactured after July 1, 2010. These emission limits are summarized below:

- NO_X: 1 gram per brake horsepower-hour (g/bhp-hr)
- CO: 2 g/bhp-hr
- VOC: 0.7 g/bhp-hr

The Enchanted Rock 21.9L engines will also be subject to the source testing, recordkeeping, and reporting requirements specified in 40 CFR 60, Subpart JJJJ for non-emergency engines. These requirements include, but are not limited to, the following:

- Owner must keep a maintenance plan and records of conducted maintenance.
- Engines must be maintained and operated in a manner consistent with good air pollution control practices for minimizing emissions.
- Owner must conduct an initial performance test and subsequent performance testing every 8,760 hours or 3 years, whichever comes first.

EPA regulations applicable to the project's proposed diesel-fueled administrative emergency engines include the NESHAP for RICE, presented in 40 CFR 63, Subpart ZZZZ, and the NSPS for combustion

ignition engines fueled by diesel, presented in 40 CFR 60, Subpart IIII. As with the Enchanted Rock 21.9L engines, 40 CFR 63.6590(c)(1) allows the RICE NESHAP requirements to be met by meeting the NSPS requirements of 40 CFR 60, Subpart IIII. These NSPS requirements include, but are not limited to, the following:

- Engines must be certified to meet appropriate emissions standards.
- Engines must be installed and operated according to manufacturer's specifications.
- For a combined total of 100 hours per year, emergency engines can be used for the following purposes:
  - Maintenance and testing
  - Emergency demand response for Emergency Alert Level 2 situations[2]
  - Responding to situations when there is at least a 5 percent or more change in voltage
  - Operating for up to 50 hours to head off potential voltage collapse or line overloads that could result in local or regional power disruption

In an emergency, such as hurricane or ice storm, any engine of any size and any fuel type can operate without meeting control requirements or emission limits (EPA 2013).

State

CARB is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California CAA. The California CAA, which was approved in 1988, requires each local air district, where ambient concentrations violate the CAAQS, to prepare an air quality management plan to achieve compliance with the CAAQS as a part of the SIP. CARB has ultimate responsibility for the SIP for nonattainment pollutants, but relies on each local air district to adopt mandatory statewide programs and provide tailored additional strategies for sources under their jurisdiction. The SIPs are a compilation of new and previously submitted plans, programs (e.g., monitoring, modeling, and permitting), district rules, state regulations, and federal controls. Local air districts and other agencies prepare SIP elements and submit them to CARB for approval. CARB forwards SIP revisions to EPA for approval and publication in the *Federal Register*. CARB also established the CAAQS, which are typically considered more stringent than the NAAQS.

CARB has established the Distributed Generation Certification Program[3] to regulate certification of distributed generation resources, or electrical generation sources that are located near the place of electricity consumption and often replace or supplement electricity from the grid. Although the project's Enchanted Rock 21.9L engines are proposed to provide load shedding, demand response and RA ancillary services, they will be permitted through the BAAQMD, as described below, and do not qualify as distributed generation resources under 17 CCR 94201. However, the engine manufacturer is expected to demonstrate compliance with the certification emission limits presented in Table 2 of CARB's Distributed Generation Certification Program, as summarized below:

- NO_X: 0.07 pounds per megawatt-hour (lb/MW-hr)
- CO: 0.10 lb/MW-hr
- VOC: 0.02 lb/MW-hr

California regulates TACs through its Air Toxics Program, which is mandated in Chapter 3.5 of the Health and Safety Code – Toxic Air Contaminants, and Part 6 – Air Toxics Hot Spots Information and Assessment (California Health and Safety Code Sections 39660 et seq. and 44300 et seq., respectively). TACs consist of a variety of compounds, including metals, minerals, soot, and hydrocarbon-based

[2] In 2015, the Delaware Department of Natural Resources and Environmental Control challenged the emergency demand response regulations in the U.S. Court of Appeals for the District of Columbia Circuit. As a result of these legal proceedings, the court remanded this portion of the NESHAP, while leaving other provisions intact. Additional details can be found at https://www.leagle.com/decision/infco20150501329.

[3] 17 CCR 94201 – 94212.

chemicals. There are hundreds of different air toxics, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust.

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. A chemical becomes a regulated TAC in California based on designation by the California Office of Environmental Health Hazard Assessment (OEHHA) (BAAQMD 2017c). For example, OEHHA completed a comprehensive health assessment of diesel exhaust in 1998. The assessment formed the basis for a CARB decision to formally identify particulate matter in diesel exhaust (DPM) as a TAC that may pose a threat to human health. In response, CARB has adopted the *Diesel Risk Reduction Plan* (CARB 2016) and a series of airborne toxic control measures for mobile and stationary sources, which are intended to reduce overall DPM emissions in California. The recommended measures can be grouped as measures that address on-road vehicles, off-road equipment and vehicles, and stationary and portable engines. Many rules provide for older, more emissive equipment to be replaced with cleaner equipment and fleets over time. As another example, CARB's Regulation for In-Use Off-Road Diesel-Fueled Fleets, presented in 13 California Code of Regulations (CCR) 2449, requires construction equipment operators to restrict all nonessential idling of construction equipment to 5 minutes or less.

Assembly Bill (AB) 617[4] was enacted in 2017 to address air pollution at the community level. AB 617 expands emission inventory requirements for both criteria and toxic air pollutants for facilities and expands monitoring requirements and risk reduction requirements. The program is centered around disadvantaged communities, defined in an ongoing process, to specifically address air pollution and emissions near each designated community. Although the project is not located near any currently identified disadvantaged communities, the project will require air permits from the BAAQMD and will be subject to state GHG emissions reporting, as demonstrated in Section 3.8. Therefore, the project will be subject to annual criteria and toxic air pollutant reporting under AB 617, and potentially subject to future risk reduction requirements.

AB 2588, also known as the Air Toxics "Hot Spots" Information and Assessment Act of 1987[5], requires facilities to prepare detailed TAC emissions inventories. Results of these emissions inventories are used to prioritize facilities for health risk assessment (HRA), which must be conducted using CARB/OEHHA guidelines. As part of its jurisdiction under AB 2588[6], OEHHA derives cancer potencies and reference exposure levels (RELs) for individual air contaminants, based on the current scientific knowledge that includes consideration of possible differential effects on the health of infants, children, and other sensitive subpopulations, and in accordance with the mandate of the Children's Environmental Health Protection Act[7]. These cancer potencies and RELs are used in health risk assessments to evaluate potential health risks associated with human exposures to estimated TAC emissions. Estimated risks are compared to levels of carcinogenic, chronic, and acute health risks deemed acceptable by the regulatory agencies. Sections of the California Public Resources Code require an assessment of impacts to public health for new or modified sources, including power plants that emit one or more TACs[8].

Under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. Diesel exhaust is a complex mixture of thousands of gases and fine particles and contains over 40 substances listed by EPA as HAPs and by CARB as TACs. DPM is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves particular attention mainly because of its ability to induce serious non-cancer effects and its status as a likely human carcinogen. CARB also characterizes diesel

[4] California Health and Safety Code Sections 39607.1, 40920.6, 40920.8, 42400, 42402, 42411, 42705.5, and 44391.2.

[5] California Health and Safety Code Sections 44360 – 44366.

[6] California Health and Safety Code Section 44360(b)(2).

[7] Senate Bill 25, Escutia, Chapter 731, Statutes of 1999; California Health and Safety Code Sections 39669.5 et seq.

[8] California Public Resources Code Section 25523(a); Title 20, Sections 1752.5, 2300 – 2309 and Division 2, Chapter 5, Article 1, Appendix B, Part (1), CCR; California CAA; California Health and Safety Code Section 39650, et seq.

exhaust as “particulate matter from diesel-fueled engines.” The impacts from human exposure would include both short- and long-term health effects. Short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Effects from long-term exposure can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. EPA lists diesel exhaust as “likely to be carcinogenic to humans” (EPA 2003).

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 (BAAQMD 2017c). Some of the BAAQMD’s key air plans and regulations are described in the following subsections.

2017 Bay Area 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 the climate. The 2017 Clean Air Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan, and is a multi-pollutant air quality plan addressing four categories of air pollutants (BAAQMD 2017b):

1) Ground-level ozone and the key ozone precursor pollutants (VOCs and NO_X)
2) Particulate matter (PM_{10} and $PM_{2.5}$), as well as the precursors to secondary $PM_{2.5}$
3) TACs
4) GHGs

The 2017 Clean Air Plan includes 85 distinct control measures to decrease fossil fuel combustion, improve energy efficiency, and decrease emissions of GHGs and other pollutants. The measures most likely to affect the project are expected to be implemented through future, more stringent regulation of air pollutants, including TACs, by BAAQMD. For example, BAAQMD is expected to adopt more stringent limits and methods for evaluating toxic risks and new regulations to reduce fuel consumption on a source-type by source-type basis. Applicability of any future regulations approved by BAAQMD would be evaluated at the time of adoption.

BAAQMD Calculating Potential to Emit for Emergency Backup Power

The BAAQMD recently released a new policy, *Calculating Potential to Emit for Emergency Backup Power Generators*, which was developed to include a new requirement and methodology for determination of potential to emit (PTE) for emergency backup power generators (BAAQMD 2019).

Under the policy, subject facilities must assume 100 hours per year of emergency operations, in addition to the requested number of annual hours for maintenance and testing, when calculating the source’s PTE and determining the applicability of requirements under BAAQMD’s NSR (Regulation 2, Rule 2) and Title V Major Facility Review (Regulation 2, Rule 6) regulations. The policy states that emission reduction credits required for a project are based solely on the permitted hours/emissions associated with maintenance and testing activities, not the assumed 100 hours of emergency operations used in the PTE calculations. Similarly, the policy notes that emissions from emergency operations are exempt from BAAQMD’s regulation for NSR of TACs (Regulation 2, Rule 5).

When implementing this policy, the BAAQMD will not approve permit conditions for backup generators that limit emergency operations to less than the assumed 100 hours per year to lower a source’s PTE. The BAAQMD set the assumed 100 hours per year for emergency operations in the policy for the sole purpose of determining whether the proposed facility would be offset through the BAAQMD’s small emissions bank or would be required to purchase offsets in the market. The policy does not in any way attempt to predict unforeseeable emergency operations, nor limit emergency operation of backup power

generators because BAAQMD recognizes that facilities need to maintain flexibility to respond to emergency situations.

This policy applies to the project's diesel-fired administrative generators as they will operate only for maintenance and testing and emergency purposes. Although the project's natural gas-fired generators will be used for emergency purposes in addition to load shedding, demand response, and behind the meter RA purposes, this policy will be applied to the calculations to determine the overall PTE from all of the project's generators.

BAAQMD Regulation 2, Rule 1: Permits – General Requirements

This rule requires the Applicant to secure written authorization from the BAAQMD Air Pollution Control Officer (APCO), in the form of an Authority to Construct permit, prior to the time a project "puts in place, builds, erects, installs, modifies, modernizes, alters or replaces any article, machine, equipment or other contrivance, the use of which may cause, reduce or control the emission of air contaminants". Furthermore, Rule 1 provides that "The APCO shall deny an authority to construct or a permit to operate if the APCO finds that the subject of the application would not or does not comply with any emission limitations or other regulations of the District (including but not limited to the BACT and offsets requirements in Regulations 2-2-301 through 2-2-303), or with applicable permit conditions or federal or California laws or regulations, or if any required fees have not been paid". The Applicant will submit an air permit application to the BAAQMD, which will provide the necessary evidence to document that the SJC project, including, without limitation, the natural gas generators and two administrative Tier IV diesel generators, would fully comply with applicable BAAQMD regulations.

In addition to the natural gas and administrative generators, the project proposes to include two natural gas-fired water heaters (one for each building) for comfort heating, with a heat input rating not to exceed 1 million British thermal units per hour (MMBtu/hr). Because these water heaters have a heat input rating less than 1 MMBtu/hr, they will be exempt from permitting under BAAQMD 2-1-114.

BAAQMD Regulation 2, Rule 2: Permits – New Source Review

This rule applies to all new or modified sources requiring a Permit to Operate and requires Best Available Control Technology (BACT) for any new source with a PTE of 10.0 or more pounds per day of any single pollutant. Offsets are required at a 1.15:1 ratio if the project would have a PTE of more than 35 tons per year (tpy) of NO_X or precursor organic compounds, and at a 1:1 ratio if the project would have a PTE of more than 100 tpy of $PM_{2.5}$, PM_{10}, or SO_2. This rule also establishes significant emission rates triggering the need for an air quality impact analysis.

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 exposures and health risks. Under this rule, a project would be denied an Authority to Construct if it exceeds any of the specified risk limits, which are consistent with BAAQMD's CEQA significance thresholds. Best Available Control Technology for Toxics (TBACT) would also be required for any new or modified source of TACs where the source has an estimated excess lifetime cancer risk greater than 1.0 in 1 million or a chronic hazard index (HI) greater than 0.20. The specific toxicity values for each particular TAC, as identified by BAAQMD and OEHHA, are listed in Table 2-5-1 of Regulation 2, Rule 5 for use in HRAs (BAAQMD 2017c). Table 2-5-1 also provides the emission threshold level for each TAC, "below which the resulting health risks are not expected to cause, or contribute significantly to, adverse health effects".

BAAQMD Regulation 2, Rule 6: Permits – Major Facility Review

This rule is intended to implement the Title V operating permit requirements and applies to major facilities. A major facility is defined as either (1) a facility that has a PTE of 100 tpy or more of any criteria air pollutant or (2) has a PTE of 10 tpy or more of a single HAP or 25 tpy or more of a combination of HAPs.

BAAQMD Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

This rule limits the emissions of NO_X and CO from stationary internal combustion engines with a power rating greater than 50 hp.This rule also outlines the BAAQMD's recordkeeping and reporting requirements applicable to stationary engines located within the Bay Area. Although the rule applies to both emergency and non-emergency engines, emergency engines are only subject to the monitoring, recordkeeping, and hour limitation provisions.

3.3.2 Significance Criteria

BAAQMD has developed air emission, dispersion modeling, and health risk thresholds of significance for CEQA analysis, as shown in Table 3.3-2. Air quality impacts resulting from demolition[9], excavation, construction, and operation of the project would be deemed significant if daily or annual emission estimates, modeled concentrations, or HRA results would exceed the BAAQMD's applicable significance thresholds. This analysis of the project is based on the general methodologies in the most recent BAAQMD CEQA Guidelines (last updated in May 2017[10] [BAAQMD 2017c]) and the numerical significance thresholds listed in Table 3.3-2.

HRAs evaluate potential human health risks associated with exposure of sensitive receptors to pollutant concentrations: in this case, project-related emissions of TACs. The risk categories evaluated in HRAs include individual excess lifetime cancer risk, non-cancer health effects from chronic (long-term) exposure, and non-cancer health effects from acute (short-term) exposure. There are two kinds of significance thresholds for the results of HRAs. Cancer risk is expressed as a numerical excess lifetime cancer risk per 1 million exposed individuals. The results of evaluation of non-cancer health effects associated with acute and chronic exposures are expressed as HI, which is the ratio of expected exposure levels to acceptable RELs (BAAQMD 2017c).

The significance thresholds for TACs and $PM_{2.5}$ applied to the siting of a new source are listed in Table 3.3-2 and summarized as follows (BAAQMD 2017c):

- An excess lifetime cancer risk level of more than 10 in 1 million
- A non-cancer chronic HI greater than 1.0
- A non-cancer acute HI greater than 1.0
- An incremental increase in the modeled annual average $PM_{2.5}$ concentration of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$)

The significance thresholds for cumulative impacts are listed in Table 3.3-2 and also summarized in the following bullet points. A project would have a cumulative considerable impact if the aggregate total of all

[9] Limited demolition is anticipated at the site as the 2 vacant residences and a storage shed/warehouse onsite, were demolished in 2021 after a fire significantly affected the safety of one of the dwellings.

[10] BAAQMD has initiated an update to its current CEQA Guidelines and thresholds of significance to reflect new or revised requirements in the State CEQA Guidelines, recent court decisions, improved analytical methodologies, and new mitigation strategies. However, until new guidance is approved, the thresholds of significance from the 2017 CEQA Guidelines are still considered appropriate for determining a project's significance, and thus those thresholds are utilized in this analysis.

past, present, and foreseeable future sources within a 1,000-foot distance from the fence line of a source plus the contribution from the project exceeds the following (BAAQMD 2017c):

- An excess lifetime cancer risk level of more than 100 in 1 million
- A non-cancer chronic HI greater than 10.0
- An incremental increase in the modeled annual average $PM_{2.5}$ concentration of greater than 0.8 µg/m^3

For assessing community risks and hazards, a 1,000-foot distance is recommended around the project property boundary. BAAQMD recommends that any proposed project that includes the siting of a new source or receptor assess associated impacts within 1,000 feet, taking into account both individual and nearby cumulative sources (that is, proposed project plus existing and foreseeable future projects). Cumulative sources represent the combined total risk values of each individual source within the 1,000-foot evaluation zone (BAAQMD 2017c).

Table 3.3-2. Bay Area Air Quality Management District Thresholds of Significance

Pollutant	Construction	Operation	
	Average Daily Emissions (pounds per day)	Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tpy)
VOCs, NO_X	54	54	10
PM_{10}	82 (exhaust only)	82	15
$PM_{2.5}$	54 (exhaust only)	54	10
Fugitive Dust	BMPs	None	None
Risk and Hazards for New Sources and Receptors (Project)	Same as Operational Threshold	Increased cancer risk of > 10.0 in 1 million Increased non-cancer risk of > 1.0 HI (chronic or acute) Ambient $PM_{2.5}$ increase of > 0.3 µg/m^3 (Zone of influence: 1,000-foot radius from property line of source or receptor)	
Risk and Hazards for New Sources and Receptors (Cumulative)	Same as Operational Threshold	Increased cancer risk of > 100 in 1 million (from all local sources) Increased non-cancer risk of > 10.0 HI (chronic, from all local sources) Ambient $PM_{2.5}$ increase of > 0.8 µg/m^3 (from all local sources; Zone of influence: 1,000-foot radius from property line of source or receptor)	

Source: BAAQMD 2017c

Notes:

> = greater than
BMP = best management practice

3.3.3 Emissions Estimation Methodology

The California Emissions Estimator Model (CalEEMod) program was selected from the list of analytical tools recommended by the BAAQMD[11] for evaluating air quality and GHG impacts pursuant to CEQA. On this list of tools, the CalEEMod program is specifically identified as appropriate for estimating criteria pollutant and GHG emissions. Furthermore, use of this BAAQMD-recommended analytical tool confirms consistency among projects before the CEC. In addition, the City of San José used the CalEEMod program in preparing the 237 Industrial Center Environmental Impact Report (2017 EIR) air quality evaluation for the previously approved data center project that was proposed on the project site.

[11] See http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools.

3.3.3.1 Demolition, Excavation and Construction

Short-term demolition, excavation and construction emissions of CO, VOCs, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ were estimated for the project. The only TAC evaluated for demolition, excavation and construction activities was DPM, which was assumed equal to estimated onsite and offsite exhaust PM_{10} emissions. Detailed demolition, excavation and construction emission calculations are presented in Appendix 3.3A. A qualified demolition contractor will inspect the existing structures prior to demolition to determine the presence of asbestos-containing materials (ACM) or lead-based paint (LBP). If ACM or LBP are present, the contractor will abate ACM or LBP, or both, consistent with the BAAQMD and state requirements. Any soil contamination will also be remediated consistent with the requirements of the Santa Clara County Department of Environmental Health.

Demolition, excavation, and construction emissions would include exhaust from fuel combustion and fugitive dust. They would result from use of construction equipment, demolition activities, soil disturbance, material movement, paving activities, and on- and offsite vehicle trips, such as material haul trucks, worker commutes, and delivery vehicles. Emissions from the approximately 17-month construction period, of which the first month includes demolition and excavation activities, were estimated using construction equipment emission factors, horsepower, and load factors from the *CalEEMod User's Guide* (BREEZE 2021), assuming a mix of equipment meeting Tier 3 and Tier 4 NO_X and PM_{10} emission standards; paving emission factors from the *CalEEMod User's Guide* (BREEZE 2021); and on-and offsite vehicle exhaust and idling emission factors from EMFAC2017.[12] Although construction activities are expected to begin in 2022, 2020 and 2021 emission factors were used to provide a more conservative emissions assessment due to the higher emission factors assumed in the model. Fugitive dust emission factors for demolition; truck dumping and loading; and excavation and grading activities were derived using methodology from the *CalEEMod User's Guide* (BREEZE 2021); fugitive dust emission factors for vehicle travel on paved and unpaved roads were derived using methodology from *AP-42* (EPA 2011a and 2006, respectively). Construction of the project would not require soil piles to be placed onsite as soil imports and exports would be directly loaded to/from the haul trucks, as appropriate, and best management practices (BMPs) for fugitive dust control would be implemented, as described in the Project Description section and later in this section. Estimated criteria pollutant demolition, excavation, and construction emissions for the project, and for which a BAAQMD significance threshold exists, are summarized in Table 3.3-3, and conservatively assume that all demolition, excavation, and construction activities would occur concurrently.

Table 3.3-3. Criteria Pollutant Emissions from Project Demolition, Excavation, and Construction

	VOCs	NOx	PM_{10}[a]	$PM_{2.5}$[a]
Average Daily Emissions (pounds per day)[b]	9.71	53.5	50.0	9.60
Maximum Emissions (tons per project)	1.82	10.0	9.36	1.80

[a] These estimates conservatively include fugitive dust emissions, even though the BAAQMD's thresholds are specific to exhaust emissions only.

[b] The BAAQMD's thresholds are for average daily emissions, so the reported results are the total project emissions averaged over the entire demolition, excavation, and construction duration of 17 months, assuming 22 days of construction activity per month.

[12] Although BAAQMD recommends the use of EMFAC2021, EMFAC2017 was used for this analysis as it is the most recent version of EMFAC approved by the EPA (https://www.federalregister.gov/documents/2019/08/15/2019-17476/official-release-of-emfac2017-motor-vehicle-emission-factor-model-for-use-in-the-state-of-california).

The BAAQMD's CEQA Guidelines (BAAQMD 2017c) consider fugitive dust impacts to be less than significant, provided that specified BMPs are implemented. As stated previously, to minimize fugitive dust impacts, the BAAQMD's recommended BMPs would be incorporated as project design features, as follows:

- All exposed surfaces (for example, parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material offsite will be covered.
- All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved surfaces will be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling [13 CCR 2485]). Clear signage will be provided for construction workers at all access points.
- All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.
- A publicly visible sign will be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. BAAQMD's phone number will also be visible to provide compliance with applicable regulations.

3.3.3.2 Operations

The operational emissions from all project components of CO, VOCs, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ were evaluated, as were TAC emissions from fuel combustion in the natural gas-fired generators and diesel-fired administrative generators and urea usage in the diesel generators' selective catalytic reduction (SCR) systems. Operational emissions result from natural gas, diesel fuel, and urea use in the generators and emission control systems, as applicable; refueling of diesel storage tanks; operation of cooling units; offsite vehicle trips for worker commutes and material deliveries; and facility upkeep, such as architectural coatings, consumer product use, landscaping, water use, waste generation, natural gas use for comfort heating, and electricity use. Each of these emission sources are described in more detail in the following paragraphs. Detailed operation emission calculations are presented in Appendix 3.3B.

Stationary Sources

Natural gas combustion in the project's 224 generators (Enchanted Rock 21.9L engines) would result in stationary source emissions of criteria pollutants and TACs from load shedding, demand response and behind the meter RA ancillary services, in addition to maintenance and testing and emergency operation. The Enchanted Rock engines would have a nominal output of 0.45 MW and be equipped with a 3-way catalyst system to reduce emissions of NO_X, CO, VOC, and air toxics. The system is configured as two catalysts (primary and secondary) in series on each of the engine banks and does not require the use of urea. The use of this 3-way catalyst system is consistent with BAAQMD's BACT determination for spark ignition natural gas-fired rich burn internal combustion engines (BAAQMD 2020). Although the system may reach full emissions control within 8 minutes of startup, hourly emissions were conservatively estimated assuming that the first 15 minutes of operation would result in uncontrolled emissions, with the remaining 45 minutes of operation resulting in controlled emissions.

With the exception of SO_2, controlled and uncontrolled emission factors for estimating criteria pollutant emissions were provided by Enchanted Rock. SO_2 emissions were estimated assuming a natural gas

sulfur content of 0.5 grain per 100 standard cubic foot. TAC emissions from the Enchanted Rock 21.9L engines were calculated using *AP-42* uncontrolled emission factors for spark combustion rich burn engines (EPA 2000). Control associated with VOC by use of the 3-way catalyst system was applied to the organic TACs only.

Annual criteria pollutant emissions from the natural gas generators were estimated by conservatively assuming all 9 hours of operation for maintenance and testing and 500 hours of operation for resource load shedding and behind the meter RA purposes have 15 minutes of uncontrolled emissions. Annual TAC emissions were estimated assuming the same number of hours per year for load shedding, demand response, and behind the meter RA purposes, in addition to maintenance and testing, but that all hours were at the controlled or uncontrolled rate, depending on the TAC's categorization as organic. Daily emissions were estimated by averaging the annual emissions over 12 months per year and 30 days per month to get a daily average emissions estimate.[13]

There will also be two additional certified Tier 2 diesel-fired engine generators, with additional control to limit emissions to the equivalent of Tier 4 emissions, to serve the administrative buildings. The first is a Caterpillar 3512C engine with a power rating of 1,817 hp (1.25 MW); the second is a Cummins QSX15 engine with a power rating of 731 hp (0.5 MW). Each generator would be equipped with a two-stage Miratech SCR System. The first stage would control particulate matter by at least 85 percent via a diesel oxidation catalyst and diesel particulate filter; the second stage would control NO_X, CO, VOCs, particulate matter, and HAPs to Tier 4 emissions standards via SCR. The two administrative generators would be tested routinely to verify that they would function during an emergency.

During routine maintenance and readiness testing, criteria pollutants and TACs would be emitted directly from the diesel-fired administrative generators. When considering emissions from these routine events, the emission calculations conservatively apply Tier 2 emission factors to CO and NO_X, and Tier 4 emission factors for PM_{10} and $PM_{2.5}$. This approach reflects the likelihood of each administrative generator's SCR not achieving full functionality during the short-duration maintenance and testing events. SO_2 emissions were based on the maximum sulfur content allowed in California diesel (15 ppm by weight per 13 CCR 2281), and conservatively assumed 100 percent conversion of fuel sulfur to SO_2. DPM emissions resulting from diesel stationary combustion were assumed equal to PM_{10} emissions, with speciated TAC emissions estimated using emission factors from *AP-42* (EPA 1996).

Ammonia would also be emitted during operation of the diesel-fired administrative generators, but only as a result of urea usage in the SCR. Although the SCR would not likely be fully functional during routine maintenance and testing events, ammonia emissions were conservatively included in the TAC emission estimates for routine operation. These emissions were estimated based on an assumed ammonia slip concentration of 5 ppm.

Annual emissions from the diesel-fired administrative generators were estimated assuming that maintenance and testing would occur for no more than 42 hours per year per generator, which is less than the 50 hour per year limit for maintenance and testing allowed in the Airborne Toxic Control Measure for Stationary Compression Ignition Engines (17 CCR 93115). Consistent with BAAQMD permitting methods, no load factor was applied. Daily emissions were estimated assuming that each generator would be operated for maintenance and testing for 42 hours per year, and then averaged over 12 months per year and 30 days per month to get a daily average emissions estimate.[14]

Daily and annual criteria pollutant emission estimates from load shedding, demand response and behind the meter RA operation, and routine maintenance and testing of the natural gas generators and routine maintenance and testing of the administrative diesel generators are included in Table 3.3-7, along with

[13] Daily emission rates were averaged over the period of a year since the natural gas generators could potentially be operated for RA purposes or tested at any time of day or any day of the year.

[14] Daily emission rates were averaged over the period of a year since the administrative generators could potentially be tested at any time of day or any day of the year.

other routine facility operation emissions described later within this section. Total TAC emissions from these non-emergency operations are included in Table 3.3-6, with TAC-specific emission details included in Appendix 3.3B.

Potential criteria pollutant and TAC emissions from the emergency operation of the natural gas and administrative generators were also estimated, as specified in BAAQMD's recently released policy, *Calculating Potential to Emit for Emergency Backup Power Generators* (BAAQMD 2019). These emissions were conservatively estimated based on the project's maximum emissions. In accordance with the BAAQMD's policy, the total PTE estimates also assume that all 224 natural gas generators would operate for 509 hours per year at 100 percent load for maintenance and testing and load shedding, demand response and behind the meter RA capabilities. The two administrative generators were assumed to operate a maximum of 42 hours per year for maintenance and testing purposes. Table 3.3-4 describes the assumptions used to estimate the total PTE from emergency operation and maintenance and testing of the natural gas and administrative generators, as well as the assumptions for load shedding, demand response and behind the meter RA operation of the natural gas generators.

Table 3.3-4. Emergency Operation, Load Shedding, Demand Response and Behind the Meter RA Operation, and Maintenance and Testing Assumptions for Generators

Parameter	Units	Value	Comments
Total Number of Natural Gas Generators	Units	224	Total number of 0.45-MW natural gas generators to be permitted. All generators would be operated for emergency operations, load shedding, demand response and behind the meter RA purposes, as well as for maintenance and testing purposes.
Total Number of Administrative Generators	Units	2	One 1.25-MW generator and one 0.5-MW generator to be permitted for emergency operations and maintenance and testing purposes.
Annual Hours of Operation per Unit Assumed for Emergency Purposes	Hours per year	100	Required by the BAAQMD's policy, *Calculating Potential to Emit for Emergency Backup Power Generators* (BAAQMD 2019).
Annual Hours of Operation per Natural Gas Generator Assumed for Load Shedding, Demand Response and Behind the Meter RA, as well as for Maintenance and Testing Purposes	Hours per year	509	500 hours for load shedding, demand response and behind the meter RA purposes and 9 hours for maintenance and testing of each natural gas generator.
Annual Hours of Operation per Administrative Generator Assumed for Maintenance and Testing Purposes	Hours per year	42	Maximum maintenance and testing hours proposed for each administrative generator.

Table 3.3-5 presents the maximum annual PTE from the natural gas-fired generators and the diesel-fired administrative generators, including both emergency and non-emergency operations.

Table 3.3-5. Criteria Pollutant Emissions from Emergency Operation, Load Shedding, Demand Response and Behind the Meter RA Operation, and Routine Maintenance and Testing

Annual Operation	Annual Emissions (tpy)					
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Natural Gas Generators - Maximum PTE[a]	3.14	51.3	2.66	0.26	0.28	0.28
Administrative Generators - Maximum PTE[b]	0.18	0.28	1.59	0.00	0.03	0.03
Total Generators – Maximum PTE	3.32	51.6	4.25	0.26	0.31	0.31

[a] Maximum PTE emissions assume operation of all 224 natural gas generators at 100 percent load. To comply with BAAQMD's policy, *Calculating Potential to Emit for Emergency Backup Power Generators* (BAAQMD 2019), it is assumed that all 224 generators would operate 609 hours per year.

[b] Maximum PTE emissions assume operation of both administrative generators at 100 percent load. To comply with BAAQMD's policy, *Calculating Potential to Emit for Emergency Backup Power Generators* (BAAQMD 2019), it is assumed that both of the administrative generators would operate 142 hours per year.

Table 3.3-6 provides total annual TAC emission estimates, considering the sum of all TACs and HAPs, from both emergency and non-emergency generator operations.

Table 3.3-6. TAC Emissions from Emergency Operation, Load Shedding, Demand Response and Behind the Meter RA Operation, and Routine Maintenance and Testing

Pollutant	Annual Emissions (tpy)[a]		
	0.45-MW Natural Gas Generators	1.25-MW Admin Generator	0.5-MW Admin Generator
Total TACs and HAPs from Non-emergency Operations[b]	1.85	0.010	0.0019
Total TACs and HAPs from Emergency Operations[c]	0.36	0.024	0.0046
Total TACs and HAPs from All Possible Operation Scenarios	2.21	0.034	0.0065

[a] All TACs and HAPs, including DPM and speciated diesel exhaust pollutants, were conservatively summed to report annual emissions. Actual total TAC or HAP emissions, as defined by the CARB and EPA, respectively, are expected to be less than what is reported here.

[b] Assumes 509 hours of operation per natural gas generator and 42 hours of operation per administrative generator per year at 100 percent load.

[c] Assumes 100 hours of operation per generator per year at 100 percent load.

Storage Tank Refueling

In addition to the stationary source emissions described above, each administrative generator would emit VOCs during refueling of the diesel storage tanks feeding each generator. Each of the project's diesel-fired administrative generators (2 in total) is expected to operate less than 42 hours per year. However, assuming each diesel-fired administrative generator is operated for 42 hours per year at their respective fuel usage rates of 92.3 and 34.4 gallons per hour, the administrative generators would together consume 5,435 gallons of diesel annually. This assumes that each administrative generator is operated at full load, which is not expected, absent prolonged outage of the electric grid. The project generators' diesel storage tanks are not required to include vapor control devices according to CARB's Vapor Recovery Program - Frequently Asked Questions (FAQs) For Aboveground Storage Tanks, which specifically states, "Note that ASTs storing diesel or jet fuel are not required to have vapor recovery

systems".[15] The South Coast Air Quality Management District's *Supplemental Instructions for Liquid Organic Storage Tanks Annual Emissions Reporting Program* (February 2017)[16] provides a diesel fuel storage tank emission factor of 0.028 pounds of VOC per 1,000 gallons for loading, storing, dispensing, and spills or leaks. This emission factor, together with the estimated total annual fuel use of 5,435 gallons per year, were used to estimate storage tank refueling emissions from the 2 administrative generator storage tanks. These emissions are included in Table 3.3-7, with calculation details included in Appendix 3.3B.

Cooling Units

The project's cooling-related emissions would result from use of refrigerants in operation of two packaged air handling units and up to 72 split system condensing units used for administrative purposes or generator cooling. Based upon manufacturer data, these units would contain R-410A coolant, which has been identified by the International Panel on Climate Change to have a global warming potential. Therefore, emissions associated with industry standard leak rates of R-410A were used to estimate potential GHG emissions and impacts in Section 3.8.

In total, 64 closed circuit cooling units will be installed to support the remainder of the facility operations. The closed-circuit cooling units are supplemented with wet cooling when the outdoor ambient air temperature is above 75 degrees Fahrenheit. For equipment longevity, each of the cooling units is equipped with a re-condensing system to remove moisture from the cooling air prior to discharge. As a result of the re-condensing operation, negligible particulate matter emissions would result from the air discharge.

Mobile Sources

Once operational, approximately 100 employees would be employed at the project site on a daily basis, split between three shifts, with approximately 30 daily vendor trips. Total vehicle trips, including vendor and employee trips, would be approximately 130 per day, which would result in mobile source criteria pollutant emissions. Emissions for mobile sources were estimated using vehicle exhaust and idling emission factors from EMFAC2017 and are included in Table 3.3-7. Although facility operation is expected to begin in 2024, 2021 emission factors were used to provide a more conservative emissions assessment due to the higher emission factors assumed in the model.

Area and Energy Sources

The project would result in area and energy source criteria pollutant emissions associated with facility upkeep (that is, building operation and maintenance). Area sources include landscaping activities, consumer product use, and periodic painting emissions. Energy sources include electrical use[17] and natural gas use for comfort heating.[18] Facility upkeep emissions were estimated using CalEEMod,[19] based on the buildings' square footage and paved areas, and are included in Table 3.3-7. The CalEEMod output is included in Appendix 3.3B.

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[15] See https://ww2.arb.ca.gov/resources/documents/frequently-asked-questions-vapor-recovery-requirements-gasoline-dispensing.

[16] See http://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/supplemental-instructions-for-liquid-organic-storage-tanks.pdf.

[17] CalEEMod does not calculate criteria pollutant emissions associated with electricity consumption, because that is considered an indirect source of emissions. Accordingly, the energy source criteria pollutant emissions presented in this analysis are only associated with natural gas use for comfort heating. Similarly, criteria pollutant emissions associated with waste generation and water use would be tied to electricity consumption and are not included in this analysis.

[18] As stated previously, the project will include two natural gas-fired water heaters for comfort heating, each with a heat input rating not to exceed 1 MMBtu/hr. Emissions from these water heaters were incorporated through CalEEMod's default estimates for comfort heating.

[19] Although BAAQMD recommends CalEEMod Version 2020.4.0, CalEEMod Version 2016.3.2 was used for the operational analysis as there have recently been technical issues with CalEEMod Version 2020.4.0 which prevented its download and use entirely.

Total Emissions from Facility Operations

Total daily and annual criteria pollutant emissions resulting from routine facility operations, including load shedding, demand response and behind the meter RA operations and maintenance and testing of 224 natural gas generators, maintenance and testing of 2 administrative generators, storage tank refueling, operation of cooling units, vehicle trips, and facility upkeep, are presented in Table 3.3-7.

Table 3.3-7. Criteria Pollutant Emissions from Routine Facility Operation

Daily Operation	Average Daily Emissions (pounds per day)					
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Generators[a]	14.9	239	15.0	1.22	1.32	1.32
Tank Refueling	0.00	--	--	--	--	--
Cooling Units[b]	--	--	--	--	--	--
Mobile Sources	0.17	4.66	3.31	0.02	0.38	0.18
Facility Upkeep	13.0	2.38	2.81	0.02	0.21	0.21
Unmitigated Project Emissions	28.1	246	21.1	1.26	1.92	1.72
Annual Operation	**Maximum Annual Emissions (tpy)**					
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Generators[a]	2.68	42.9	2.69	0.22	0.24	0.24
Tank Refueling	0.00	--	--	--	--	--
Cooling Units[b]	--	--	--	--	--	--
Mobile Sources	0.03	0.85	0.61	0.004	0.07	0.03
Facility Upkeep	2.38	0.43	0.51	0.003	0.04	0.04
Unmitigated Project Emissions	5.09	44.2	3.81	0.23	0.35	0.31

[a] Emissions assume concurrent operation of all 224 natural gas generators at 100 percent load for 509 hours per year and 2 administrative generators at 100 percent load for 42 hours per year.

[b] Per above discussion, cooling units would result in negligible particulate matter emissions.

Note:

-- = No or negligible emissions expected from this source

3.3.4 Air Quality Impact Analysis

An ambient air quality impact analysis, including dispersion modeling, was conducted as follows:

- To estimate reasonable worst-case ground-level concentrations that would result from the project under 50, 75, and 100 percent generator load scenarios
- To combine modeled, project-related estimates with monitored background concentrations
- To compare predicted results with applicable state and federal ambient air quality standards and BAAQMD significance criteria

The analysis was conducted in accordance with the air quality impact analysis guidelines presented in 40 CFR 51, Appendix W, *Guideline on Air Quality Models* (EPA 2017).

The analysis includes an evaluation of the potential effects of simple, intermediate, and complex terrain, and aerodynamic effects due to nearby buildings and structures (downwash) on plume dispersion and ground-level concentrations. A numerical Gaussian plume model was used in the analysis. The model assumes that the concentrations of emissions within a plume can be characterized by a Gaussian distribution of gaseous concentrations about the plume centerline. Gaussian dispersion models are approved by EPA and BAAQMD for regulatory use and are based on conservative assumptions (that is, the models tend to over-predict actual impacts by assuming steady-state conditions, no pollutant loss through conservation of mass, and no chemical reactions).

Subsections 3.3.4.1 and 3.3.4.2 present the following information:

- Dispersion modeling methodology for evaluating impacts on ambient air quality
- Source parameters and data used in dispersion modeling

Dispersion modeling results compared to the CAAQS and NAAQS are presented in Section 3.3.6.

3.3.4.1 Dispersion Modeling Methodology

Model Selection and Model Options

The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) (Version 21112) was used with regulatory default options, as recommended in EPA's *Guideline on Air Quality Models* (EPA 2017). Supporting pre-processing programs for AERMOD were also used, including the following:

- BPIP-PRIME (Version 04274)
- AERMAP (Version 21112)

AERMOD is a steady-state plume model that simulates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources and simple and complex terrain. This model is recommended for short-range (less than 50 kilometers [km]) dispersion from the source. The model incorporates the Plume Rise Model Enhancement (PRIME) algorithm for modeling building downwash. AERMOD is designed to accept input data prepared by two specific pre-processor programs, AERMET and AERMAP. AERMOD was run with the following options:

- Regulatory default options
- Direction-specific building downwash
- Urban population
- Actual receptor elevations and hill height scales obtained from AERMAP

The modeled facility layout is presented in Appendix 3.3C, Figure 1.

Meteorological Data

The analysis was performed with 5 years of data provided by the BAAQMD. The data were collected at the Moffett Field surface station (WBAN 23244) for calendar years 2013 through 2017. The Moffett Field surface station is located approximately 6.5 miles west of the project site and best represents the topography at the project site. The concurrent daily upper air sounding data from the Oakland International Airport station (WBAN 23230) were also included. The data were pre-processed with AERMET (Version 18081) by the BAAQMD for direct use in AERMOD.

Table 3.3-8 presents a summary of the percent completeness of wind speed and wind direction data. A cumulative wind rose for 2013 to 2017 data from the AERMET-processed surface files for the Moffett Field surface station is shown in Appendix 3.3C, Figure 3. The 5-year mean wind speed is 2.74 meters per second (m/s).

Table 3.3-8. Meteorological Data Completeness

Parameter	2013	2014	2015	2016	2017
Valid Wind Direction and Speed Observations	8,751	8,752	8,720	8,727	8,725
Possible Observations	8,760	8,760	8,760	8,784	8,760
Percent Complete (%)	99.90	99.91	99.54	99.35	99.60

Building Downwash

Building influences on stacks are calculated by incorporating the updated EPA Building Profile Input Program for use with the PRIME algorithm. Appendix 3.3C, Figure 1 shows the facility layout. The stack heights used in the dispersion modeling were the actual, as-designed stack heights, because those stack heights would be less than good engineering practice stack heights.

Receptor Grid

The ambient air boundary was defined by the fence line surrounding the project site. The selection of receptors in AERMOD were as follows:

- 25-meter (m) spacing along the fence line
- 50-m spacing from the fence line to 500 m from the grid origin
- 100-m spacing from beyond 500 m to 1 km from the fence line
- 500-m spacing from beyond 1 km to 5 km from the fence line
- 1,000-m spacing from beyond 5 km to 10 km from the fence line

AERMAP (Version 21112) was used to process terrain elevation data to obtain the elevation for all receptors using National Elevation Dataset (1 arc-second, or approximately 30 m, resolution) files prepared by the U.S. Geological Survey. AERMAP first determined the base elevation at each receptor. Then AERMAP created hill height scale by searching for the terrain height and location that has the greatest influence on dispersion for each individual source and receptor. Both the base elevation and hill height scale data were produced for each receptor by AERMAP as a file or files that were directly accessed by AERMOD. All receptor locations were expressed in the Universal Transverse Mercator North American Datum 1983, Zone 10 coordinate system. The modeled receptor grid is shown in Appendix 3.3C, Figure 2.

Sensitive Receptors. Sensitive receptors (such as infants, the aged, and people with specific illnesses or diseases) are the subpopulations who are more sensitive to the effects of toxic substance exposure. Examples of receptor locations include residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. Residences could include houses, apartments, and senior living complexes. Medical facilities could include hospitals, convalescent homes, and health clinics. Playgrounds could be play areas associated with parks or community centers (BAAQMD 2017c). The potential sensitive receptor locations evaluated in the HRA for the project include the following, consistent with BAAQMD's *Recommended Methods for Screening and Modeling Local Risks and Hazards* (BAAQMD 2012):

- Residential dwellings, including apartments, houses, and condominiums
- Schools, colleges, and universities
- Daycares
- Hospitals
- Senior-care facilities

A sensitive receptor search was conservatively conducted within the 2-km zone of influence, which is a much greater distance than the 1,000-foot zone of influence recommended by the BAAQMD. It was determined that the sensitive receptor locations near the project site include primarily schools, preschool through elementary-level; daycares; health centers; and a senior care center. The area directly east and south of the project site consists of various businesses. The nearest residential neighborhood is located approximately 0.3 mile south of the project site.

The sensitive receptors were used as discrete receptor locations in the model for purposes of conducting the HRA, as described in Section 3.3.5.

Urban Factor

The project site is located in the Milpitas region of California and is considered an urban area, because the land use surrounding the project site is predominately classified as urban. Therefore, the model used a single urban area in AERMOD. The population estimate of Santa Clara County in 2019 was 1,927,852 people (U.S. Census Bureau 2019). This population was included in the model to help define the differential heating effect that develops at night due to the urban population.

Refined Analysis for 1-hour NO_2

For comparison to the NAAQS and CAAQS, NO_2 modeling followed a Tier 2 approach described in Section 4.2.3.4 of EPA's *Guideline on Air Quality Models* (EPA 2017). The Tier 2 analysis assumes an ambient equilibrium between NO and NO_2 using the Ambient Ratio Method 2 (ARM2) approach, in which the conversion of emitted NO to NO_2 is predicted using hourly ambient NO_X monitoring data. For this modeling, the ARM2 option was used with an in-stack ratio (ISR) of NO_2/NO_X of 0.1 and a maximum out-of-stack NO_2/NO_X ratio of 0.9. The NO_2 ISR Database (EPA 2020), developed using EPA-verified testing, indicates that diesel internal combustion engines typically have an ISR of 0.08. Based upon these data, the model conservatively used 0.1 as an ISR for use in ARM2. These data are appropriate to the project because hourly NO_X emissions from each diesel-fired administrative generator are larger than the hourly NO_X emissions from each natural gas-fired generator.

For purposes of modeling, the administrative generators can be classified as intermittent sources by the EPA because they will operate less than 500 hours per year (EPA 2011b). As a result, the annual average hourly emission rate for each administrative generator was used in the 1-hour averaging period modeling analysis for demonstrating compliance with the NAAQS, consistent with EPA's *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard Memorandum* (EPA 2011b).

3.3.4.2 Source Parameters and Data Used in Dispersion Modeling

All 224 natural gas generators and both administrative generators were modeled as point sources with vertical exhaust stacks and no rain-caps, based on the operating assumptions listed in Table 3.3-9.

Table 3.3-9. Generator Operating Assumptions

Averaging Period	Operating Assumption[a]
1-hour	Assumes all generators could operate at 100 percent load at the same time
3-hour	Assumes all generators could operate at the maximum 1-hour rate during a 3-hour period
8-hour and 24-hour	Assumes all natural gas generators could operate at the maximum 1-hour rate for up to 24 hours per day and that both administrative generators could operate at the maximum 1-hour rate for a maximum of 4 hours per day
Annual	Assumes all natural gas generators could each operate at 100 percent load for up to 509 hours per year and that both administrative generators could each operate at 100 percent load for up to 42 hours per year

[a] These assumptions only apply to generator operation for load shedding, demand response, behind the meter RA, and maintenance and testing purposes, as applicable.

Source parameters used for modeling the natural gas and administrative generators were determined from manufacturer and performance data, as detailed in Appendix 3.3B and summarized in Table 3.3-10. The base elevation for each source was estimated based on a central elevation within the facility fence line. Consistent with the project design, the modeling assumed that the entire surface within the property boundary would be graded to this elevation; therefore, all buildings and sources would have this same elevation. A table showing individual source parameters for all generators is included in Appendix 3.3C. Although the natural gas generators would each have two smaller stacks at the top of the unit, a single representative stack was used to characterize the plume release from each natural gas generator in AERMOD. The use of a single representative stack is appropriate since both stacks would be adjacent to each other, the exhaust flow from each unit is conserved, and the approach was approved by the CEC.[20]

Table 3.3-10. Generator Source Parameters for Dispersion Modeling

Load Scenario	Source	Base Elevation (m)	Stack Height (m)	Exhaust Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
50% Load	0.45-MW Natural Gas Generators (224)	5	3.96	727.59	14.07	0.22
	1.25-MW Admin Generator (1)	5	6.10	715.93	56.10	0.25
	0.5-MW Admin Generator (1)	5	6.10	715.37	10.67	0.36
75% Load	0.45-MW Natural Gas Generators (224)	5	3.96	755.37	19.92	0.22
	1.25-MW Admin Generator (1)	5	6.10	735.93	75.26	0.25
	0.5-MW Admin Generator (1)	5	6.10	728.71	13.17	0.36
100% Load	0.45-MW Natural Gas Generators (224)	5	3.96	783.15	27.19	0.22
	1.25-MW Admin Generator (1)	5	6.10	814.82	100.57	0.25
	0.5-MW Admin Generator (1)	5	6.10	752.04	16.36	0.36

Note:
K = degrees Kelvin

Criteria pollutant emission rates used for modeling were developed as described in Section 3.3.3.2. The estimated 1-hour emission rates represent the maximum amount of each pollutant that would be released in any given hour. The estimated 3-hour emission rates were conservatively assumed equal to the 1-hour emission rate, based on the understanding that each generator could operate at the maximum 1-hour emission rate for 3 consecutive hours. Emission rates used for modeling 8-hour and 24-hour averaging periods were calculated assuming each natural gas generator could operate up to 24 hours per day, during a load shedding, demand response or behind the meter RA event[21] occurring on any day of the year for the entire day, and that each administrative generator would only operate for 4 hours in a given 24-hour period, consistent with the possibility of uninterrupted power supply testing occurring on any day of the year. Annual emission rates used for modeling assume each natural gas generator could operate a maximum of 509 hours per year and that each administrative generator could operate a maximum of 42 hours per year. Table 3.3-11 includes the emission rates used for modeling for each criteria pollutant from a single generator.[22] Emission rates for all 224 natural gas generators and two administrative generators are presented in Appendix 3.3C.

[20] Email communication from Lisa Worral/CEC to Jerry Salamy/Jacobs, July 26, 2021.

[21] Extremely unlikely.

[22] Although emission rates for all pollutant averaging periods are presented here, not all averaging periods were required to be modeled based on the discussion presented in Section 3.3.6.

Table 3.3-11. Criteria Pollutant Emission Rates for Dispersion Modeling

Pollutant	Averaging Period	0.45-MW Natural Gas Generator Emission Rate (lb/hr)			1.25-MW Admin Generator Emission Rate (lb/hr)[a]			0.5-MW Admin Generator Emission Rate (lb/hr)[a]		
		100% Load	75% Load	50% Load	100% Load	75% Load	50% Load	100% Load	75% Load	50% Load
NO_X	1-hour[b]	0.039	0.029	0.019	14.98[c]	11.32[c]	7.73[c]	7.40[c]	5.61[c]	3.83[c]
	Annual[d]	0.002	0.002	0.001	0.07	0.05	0.04	0.04	0.03	0.02
CO	1-hour[b]	0.752	0.564	0.376	3.16	2.39	1.63	0.73	0.55	0.38
	8-hour[e]	0.752	0.564	0.376	1.58	1.20	0.82	0.36	0.27	0.19
$PM_{2.5}$	24-hour[e]	0.004	0.003	0.002	0.056	0.042	0.029	0.006	0.004	0.003
	Annual[d]	0.0002	0.0002	0.0001	0.0016	0.0012	0.0008	0.0002	0.0001	0.0001
PM_{10}	24-hour[e]	0.004	0.003	0.002	0.056	0.042	0.029	0.006	0.004	0.003
	Annual[d]	0.0002	0.0002	0.0001	0.0016	0.0012	0.0008	0.0002	0.0001	0.0001
SO_2	1-hour[b]	0.0039	0.003	0.0021	0.020	0.014	0.010	0.007	0.005	0.004
	3-hour[f]	0.0039	0.003	0.0021	0.020	0.014	0.010	0.007	0.005	0.004
	24-hour[e]	0.0039	0.003	0.0021	0.003	0.002	0.002	0.001	0.0009	0.0007
	Annual[d]	0.0002	0.0002	0.0001	0.00009	0.00007	0.00005	0.00003	0.00003	0.00002

[a] Emission rates used for dispersion modeling were based on Tier 2 emission factors for NO_X and CO, assuming the SCR System is not yet operational, and Tier 4 emission factors for PM_{10} and $PM_{2.5}$, assuming control via a diesel particulate filter.

[b] Maximum emission rate in any given hour.

[c] For purposes of modeling, the administrative generators can be classified as intermittent sources by the EPA because they will operate less than 500 hours per year (EPA 2011b). As a result, the annual average hourly emission rate was used in the 1-hour averaging period modeling analysis for demonstrating compliance with the NAAQS, consistent with EPA's *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard Memorandum* (EPA 2011b). Although not shown in Table 3.3-11 above, that value was calculated as follows: Table 3.3-11 1-hour NO_2 Emission Rate (lb/hr) x 42 (hours/year) / 8,760 (hours/year).

[d] Calculated as the total annual emissions, based on 509 hours of operation per year for the natural gas generators and 42 hours of operation per year for the administrative generators, averaged over 8,760 hours.

[e] Calculated assuming that each natural gas generator could operate at the maximum 1-hour emission rate for up to 24 hours within a 24-hour period, but that each administrative generator will only operate a maximum of 4 hours within a 24-hour period.

[f] Equal to the 1-hour emission rate, based on the understanding that each generator could operate at the maximum 1-hour emission rate for 3 consecutive hours.

Note:

lb/hr = pound(s) per hour

3.3.5 Health Risk Assessment

An HRA requires dispersion modeling of TAC emissions estimated for the project, as described in Section 3.3.4, and characterization of the resultant risk from estimated TAC concentrations using an approved risk assessment methodology. This study follows 2015 guidance from the OEHHA for preparation of HRAs (OEHHA 2015). The Hotspot and Reporting Program Version 2 (HARP2; CARB 2015) and OEHHA methodology were used to calculate risk. This section describes the use of HARP2 and the OEHHA methodology to characterize risks that would potentially result from demolition/excavation/construction and operation of the project. The risk assessment results are reported and compared to the relevant BAAQMD thresholds in Section 3.3.6.

TACs considered in evaluating the health impacts of the project are those included in BAAQMD Regulation 2, Rule 5. The only TAC evaluated in the demolition/construction HRA was DPM.

The TACs evaluated in the operational HRA from the natural gas-fired generators were speciated total organic gases (TOG) from natural gas combustion, as identified in *AP-42*, Section 3.2 for rich burn engines (EPA 2000). These include the following:

- Acetaldehyde
- Acrolein
- Benzene
- Formaldehyde
- Naphthalene
- Toluene
- Polycyclic aromatic hydrocarbons (PAHs)
- Xylene
- 1,1,2,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,1-Dichloroethane
- 1,3-Butadiene
- Carbon Tetrachloride
- Chlorobenzene
- Chloroform
- Ethylbenzene
- Ethylene dibromide
- Methanol
- Methylene chloride
- Styrene
- Vinyl chloride

The TACs evaluated in the operational HRA from the diesel-fired administrative generators were DPM, ammonia, and the speciated TOG in diesel exhaust, as identified in *AP-42*, Section 3.4 for large diesel engines (EPA 1996). The TACs from speciated TOG in diesel exhaust include the following:

- Acetaldehyde
- Acrolein
- Benzene
- Formaldehyde
- Naphthalene
- Propylene
- Toluene

- Total PAHs[23]
- Xylene

The cancer risk, chronic HI, and acute HI predicted by the HRA for demolition/construction and operation of the project were based on TAC emissions from the project. These emission estimates were developed as described in Section 3.3.3, compared to BAAQMD thresholds, and used as inputs to the HRA.

The HRA process requires four general steps to estimate health impacts:

1) Identify and quantify project-generated emissions.
2) Model pollutant dispersion to estimate ground-level TAC concentrations at each receptor location
3) Assess potential for human exposure.
4) Use a risk characterization model to estimate the potential health risk at each receptor location.

The methods used in the demolition/excavation/construction and operational HRAs are described in more detail in the following subsections, as related to these four general steps.

3.3.5.1 HRA Approach and Risk Characterization

As recommended by the 2015 OEHHA Guidance, a Tier 1 assessment was performed. The Tier 1 assessment is the most conservative of the four tier assessment methodologies identified in the OEHHA Guidance and uses a standard point-estimate approach with standard OEHHA assumptions (OEHHA 2015).

The HRA included potential health impacts from TAC exposure on receptors through the following pathways:

- Inhalation
- Dermal absorption
- Soil ingestion
- Mother's milk
- Homegrown produce

The inhalation cancer potency, oral slope factor values, and RELs used to characterize health risks associated with the modeled impacts were obtained from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* (OEHHA & CARB 2020). Although not required by the 2015 OEHHA Guidance for a Tier 1 assessment, residential exposure through the consumption of homegrown produce (including pork, chicken, and eggs) was conservatively included in the assessment.

The following pathways were deemed not applicable to the project, per regulatory guidance, and thus were *not* included in the assessment:

- Surface drinking water
- Still-water fishing
- Subsistence farming

Cancer

Cancer risk was evaluated based on estimated long-term ground-level concentrations of TACs, as calculated from AERMOD, and the 2015 OEHHA assumptions for inhalation cancer potency, oral slope factor, frequency, and breathing rate of exposed persons. Cancer risk results are expressed on a number-per-million basis. The cancer risks estimated for the Maximally Exposed Individual Resident (MEIR), Maximally Exposed Individual Worker (MEIW), and Maximally Exposed Sensitive Receptor

[23] Total PAHs include benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

(MESR) were compared to the BAAQMD threshold for acceptable carcinogenic risks. These results are presented in Section 3.3.6.

Two HRAs were conducted: one based on the project's demolition, excavation, and construction emissions, and the other based on the project's load shedding, demand response and behind the meter RA, and testing and maintenance operational emissions. Both HRAs calculated residential, worker, and sensitive receptor cancer risk due to exposure to project emissions. As required by the 2015 OEHHA Guidance, sensitive receptor (including residential) cancer risks were estimated assuming exposure beginning in the third trimester of pregnancy; worker cancer risk was estimated assuming an 8-hour-per-day, 250 day-per-year exposure, beginning at the age of 16 (OEHHA 2015). The demolition/excavation/construction HRA assumed a 2-year rolling exposure duration, intended to conservatively mirror the 17-month construction duration, of which the first month includes demolition/excavation activities. The operational HRA assumed a conservative 30-year continuous exposure duration for residential and sensitive receptors and a 25-year exposure duration for workers (OEHHA 2015).

Non-cancer Chronic Exposure

Chronic toxicity is defined as adverse health effects from prolonged (long-term) chemical exposure to toxicants or other stressors. To assess chronic non-cancer exposures to emissions from project demolition, excavation, construction, and operation, long-term TAC ground-level concentrations were evaluated based on the RELs developed by OEHHA for each TAC. The REL is a concentration in ambient air at, or below which, no adverse health effects are anticipated. Non-cancer chronic health risks were calculated as a hazard quotient (or HI), which is the calculated exposure concentration of each contaminant divided by its REL. Hazard quotients for pollutants affecting the same target organ are summed with the resulting totals expressed as HIs for each organ system. The non-cancer chronic risks estimated for the MEIR, MEIW, and MESR were compared to the BAAQMD non-cancer chronic threshold. These results are presented in Section 3.3.6.

Non-cancer Acute Exposure

Acute toxicity is defined as adverse health effects caused by a single chemical exposure of no more than 24 hours. To assess acute non-cancer risks from project operation, the 1-hour TAC ground-level concentrations estimated for each contaminant were divided by the contaminant's acute REL to obtain an acute HI. Hazard quotients for pollutants affecting the same target organ were summed with the resulting totals expressed as HIs for each organ system. The non-cancer acute risks estimated for the MEIR, MEIW, and MESR were compared to the BAAQMD non-cancer acute threshold. These results are presented in Section 3.3.6.

3.3.5.2 Demolition, Excavation, and Construction HRA

A screening HRA was conducted to evaluate the potential health risks associated with pollutant exposure during demolition, excavation, and construction of the project. DPM was the only TAC evaluated consistent with the BAAQMD's CEQA guidance, and emissions of DPM were assumed to be equal to the exhaust PM_{10} emissions estimated for onsite and offsite construction equipment and off-road vehicles. The emissions and screening HRA methodology are described in the following paragraphs.

Emissions

DPM emissions result from diesel fuel combustion in onsite and offsite construction equipment and off-road vehicles. DPM emissions resulting from the demolition and construction activities were derived from the emission estimates presented in Appendix 3.3A, as follows:

- DPM was assumed to be best represented by PM_{10} emitted as a result of fuel combustion. Therefore, fugitive dust emissions were excluded, as they are not expected to include DPM.

- Offsite, on-road contributions of PM_{10} resulting from material haul truck trips, worker commute trips, and vendor delivery trips were excluded, as they are not expected to significantly contribute to localized impacts of DPM.
- Onsite and offsite contributions of PM_{10} resulting from off-road, gasoline-fueled light-duty trucks were conservatively included, although they are not expected to emit DPM.
- PM_{10} emissions resulting from diesel-fueled construction equipment exhaust were estimated assuming a mix of equipment meeting Tier 3 and Tier 4 PM_{10} emission standards.

For modeling, these emissions were averaged over the construction period (approximately 17 months) and spatially distributed within the demolition, excavation, and construction area. Although some of the demolition, excavation, and construction activities would occur offsite in proximity to the project, all emissions were modeled as being released from the project site due to the temporary nature of the offsite emissions. The emission rates used for modeling are presented in Table 3.3-12, with detailed calculations presented in Appendix 3.3D.

Table 3.3-12. Diesel Particulate Matter Emission Rates for Project Demolition and Construction Used in HRA Modeling

Emissions Category	DPM Exhaust Emissions		
	Total (lb/project)	Annualized (lb/year)[a]	Modeled Rate (g/s)
Total Demolition and Construction Emissions	604	426	0.006
Demolition and Construction Emissions per Modeled Source[b]	1.38	0.98	0.00001

[a] Annualized emissions were calculated by averaging the total project emissions over a 17-month construction period.

[b] A total of 437 sources were modeled.

Notes:

g/s = gram(s) per second
lb/project = pound(s) per project
lb/year = pound(s) per year

Methodology

The atmospheric dispersion of emitted DPM was modeled using AERMOD (Version 21112). The modeled output (maximum ground-level concentrations), along with equations from the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015), were used to estimate the cancer and chronic (non-cancer) health risks for residential and worker exposure to DPM emissions. Acute (non-cancer) health risks were not estimated, because there is no acute inhalation REL for DPM, thus indicating that DPM is not known to result in acute health hazards (OEHHA 2015; OEHHA & CARB 2020). Details regarding the model selection, model options, meteorological data, and receptor grid spacing used to conduct this screening HRA are consistent with those described in Section 3.3.4. The construction source parameters used for modeling and health risk estimation, specific to the screening HRA, are described in more detail in the following paragraphs.

Source Parameters. The exhaust emissions resulting from construction equipment and vehicles were modeled as a set of point sources spaced approximately 25 m apart over the onsite demolition, excavation, and construction area with a horizontal stack release. The horizontal release type is an AERMOD beta option (that is, nonregulatory default option), which negates mechanical plume rise. This conservative approach was used because it is unknown whether all construction equipment will have vertically oriented exhaust stacks. Stack release parameters consisted of a stack release temperature of 533 degrees Kelvin (K; 500 degrees Fahrenheit), a stack diameter of 0.127 m (5 inches), and a release height of 4.6 m (15 feet) based on data for typical construction equipment. Modeling was also restricted to the hours of 7 a.m. to 7 p.m., which was assumed to coincide with the expected daily construction

schedule allowed by local noise ordinances. A detailed summary of the modeling inputs is presented in Appendix 3.3D.

Health Risk Estimates. The screening HRA estimated the 2-year rolling cancer risks, aligned with the expected construction duration, at the MEIR, MEIW, and MESR. Exposure was assumed to start during the third trimester for residents and sensitive receptors and at age 16 for workers. The excess lifetime cancer risks were estimated using the following:

- Equations 3.4.1.1 and 8.2.4A from the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015) for residential exposure
- Equations 5.4.1.2A, 5.4.1.2B, and 8.2.4B from the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015) for worker exposure
- Maximum annual ground-level concentrations used to estimate risk were determined through dispersion modeling with AERMOD
- Demolition and construction emission estimates used for AERMOD modeling are presented in Table 3.3-12

Chronic risks were also estimated for the MEIR, MEIW, and MESR, based on the emission rates and ground-level concentrations described above. To calculate chronic risk, as characterized by an HI, the maximum annual ground-level DPM concentration determined through dispersion modeling with AERMOD was divided by the DPM REL of 5 µg/m^3 (OEHHA & CARB 2020).

3.3.5.3 Operational HRA

A complete HRA was conducted to evaluate the potential health risks associated with exposure to airborne emissions from routine operation of the facility. The emissions, HRA methodology, and risk characterization are described in the following paragraphs.

Emissions

TAC emissions associated with routine facility operation consist of combustion byproducts produced by the natural gas-fired generators and the diesel-fired administrative generators. Chemicals to be evaluated were speciated TOG in natural gas and diesel exhaust, DPM, and ammonia, where applicable.

TAC emissions from the natural gas-fired generators were calculated using the methodology described in Section 3.3.3.2, assuming the 3-way catalyst system controls TAC emissions with the same 94 percent control efficiency as VOC. These estimates conservatively assume all 224 natural gas-fired generators would operate at 100 percent load for 509 hours per year. Cancer and non-cancer chronic risks were estimated based on modeling of annual emissions; non-cancer acute risks were estimated based on modeling of maximum hourly emissions. All TACs listed in Section 3.3.3.5 as byproducts of natural gas combustion were included in HARP2. Detailed emission calculations are provided in Appendix 3.3B.

When considering diesel exhaust from the administrative generators, DPM was the only TAC modeled in HARP2 with annual emission rates, based on DPM being a surrogate for the whole diesel exhaust per Appendix D of the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015). Additionally, ammonia would be emitted only during SCR operation. Although the emission estimates for NO_X assume the SCR would not yet be fully operational during maintenance and testing events, ammonia was conservatively included in the annual and short-term analyses. Since DPM does not have an associated acute REL, the diesel exhaust is speciated for the short-term period. Emissions were calculated using the methodology described in Section 3.3.3.2. These estimates conservatively assume that both diesel-fired administrative generators would operate at 100 percent load for 42 hours per year. Consistent with Appendix D of the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015), cancer and non-cancer chronic risks were estimated based on modeling of annual ammonia and DPM emissions; non-cancer

acute risks were estimated based on modeling of hourly emissions of ammonia, acetaldehyde, acrolein, benzene, DPM, formaldehyde, naphthalene, propylene, toluene, total PAHs, and xylenes. Detailed emission calculations are provided in Appendix 3.3B.

Table 3.3-13 provides the hourly and annual TAC emission rates used for modeling each individual generator. These pollutants were identified as TACs per BAAQMD Regulation 2, Rule 5, Table 2-5-1. For the diesel-fired administrative generators, the speciated PAHs were modeled as total PAH in HARP2, with naphthalene separately included for the short-term acute health risk calculations. DPM was the only diesel exhaust TAC modeled in HARP2 with annual emission rates per Appendix D of the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015). No similar restrictions or pollutant groupings were required for natural gas exhaust.

Table 3.3-13. Toxic Air Contaminant Emission Rates (at 100% Load) Used in HRA Modeling

Pollutant	0.45-MW Natural Gas Generator		1.25-MW Admin Generator		0.5-MW Admin Generator	
	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
Acetaldehyde	0.0009	0.45	0.003	N/A	0.0001	N/A
Acrolein	0.0008	0.42	0.0001	N/A	0.00004	N/A
Ammonia[a]	N/A	N/A	0.092	3.85	0.034	1.43
Benzene	0.0005	0.254	0.0099	N/A	0.0037	N/A
DPM[b]	N/A	N/A	0.336	14.13	0.035	1.49
Formaldehyde	0.0065	3.29	0.0010	N/A	0.0004	N/A
Naphthalene	0.00003	0.0156	0.0016	N/A	0.0006	N/A
Propylene	N/A	N/A	0.036	N/A	0.013	N/A
Toluene	0.00018	0.0896	0.0036	N/A	0.0013	N/A
Total PAH[c]	0.00004	0.0226	0.0010	N/A	0.0004	N/A
Xylenes	0.00006	0.0313	0.0025	N/A	0.0009	N/A
1,1,2,2-Tetrachloroethane	0.000008	0.0041	N/A	N/A	N/A	N/A
1,1,2-Trichloroethane	0.000005	0.0025	N/A	N/A	N/A	N/A
1,1-Dichloroethane	0.000004	0.0018	N/A	N/A	N/A	N/A
1,3-Butadiene	0.00021	0.106	N/A	N/A	N/A	N/A
Carbon tetrachloride	0.000006	0.0028	N/A	N/A	N/A	N/A
Chlorobenzene	0.000004	0.0021	N/A	N/A	N/A	N/A
Chloroform	0.000004	0.0022	N/A	N/A	N/A	N/A
Ethylbenzene	0.000008	0.0040	N/A	N/A	N/A	N/A
Ethylene dibromide	0.000007	0.0034	N/A	N/A	N/A	N/A
Methanol	0.00097	0.491	N/A	N/A	N/A	N/A
Methylene chloride	0.000013	0.0066	N/A	N/A	N/A	N/A
Styrene	0.000004	0.0019	N/A	N/A	N/A	N/A
Vinyl chloride	0.000002	0.0012	N/A	N/A	N/A	N/A

[a] Ammonia emissions have been conservatively included in the health risk modeling, even though this TAC is only expected to be emitted during emergency operations when the SCR System is functional.

[b] DPM emission rates were assumed equal to exhaust PM_{10} emission rates.

[c] Total PAH was modeled instead of speciated PAHs, with the exception of naphthalene. To most accurately predict health risks resulting from naphthalene exposure, emissions of naphthalene were subtracted from the Total PAH emissions and modeled independently.

Note:

N/A = Not applicable. For DPM and ammonia emitted by the diesel-fired generators, only DPM and ammonia were modeled for the annual scenario. For all other instances, the pollutant is not emitted by natural gas or diesel combustion.

Methodology

The operational HRA was conducted in accordance with the following guidance:

- *Air Toxic Hot Spots Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015)
- *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines* (BAAQMD 2016)
- *Guideline on Air Quality Models* (EPA 2017)

The operational HRA modeling was conducted using CARB's HARP2 Air Dispersion Modeling and Risk Assessment Tool (ADMRT). To facilitate calculation of long-term TAC ground-level concentrations at each modeled receptor, the AERMOD air dispersion modeling output plot files were imported into HARP2.

Risk Characterization

The results of the dispersion modeling analysis represent an intermediate product in the HRA process as the AERMOD output plot files were imported into HARP2, and HARP2 was subsequently used to determine cancer, chronic, and acute health risks. AERMOD (Version 21112) was used to predict ground-level concentrations of TAC emissions associated with project operation. The model selection, model options, source parameters, meteorological data, and receptor grid spacing are consistent with those described in Section 3.3.4 and are not repeated here. A unit emission rate (1 g/s) was used to model each source, as outlined in the HARP2 ADMRT manual.[24] Cancer risks and chronic and acute non-cancer exposures were assessed as previously described.

3.3.6 Environmental Impacts

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The project site is located within the BAAQMD's jurisdiction, which is the agency primarily responsible for assuring that federal and state ambient air quality standards are met and maintained in the SFBAAB. The BAAQMD has permit authority over stationary sources, acts as the primary reviewing/responsible agency for environmental documents with respect to air quality and GHG emissions, and develops and implements rules and regulations that must be consistent with or more stringent than federal and state air quality laws and regulations. The project's consistency with the *2017 Bay Area Clean Air Plan* and other applicable BAAQMD regulations is discussed in the following paragraphs.

According to the 2017 BAAQMD CEQA Guidelines, a project would be considered consistent with the *2017 Bay Area Clean Air Plan* if the project would not result in significant and unavoidable air quality impacts after the application of all feasible mitigation (BAAQMD 2017c). For construction, the CEQA Guidelines state that "if daily average emissions of construction-related criteria air pollutants or precursors would exceed any applicable threshold of significance…, the project would result in a significant cumulative impact," and additional analysis would be required (BAAQMD 2017c). As shown in Table 3.3-14, the project's daily average demolition, excavation, and construction emissions do not exceed the BAAQMD's significance thresholds for VOCs, NO_X, PM_{10}, or $PM_{2.5}$. Therefore, the project's demolition, excavation, and construction activities will not result in a significant cumulative impact. It is anticipated that implementation of the project design features described in Section 3.3.3.1 would control potential fugitive dust emissions, thus resulting in less-than-significant fugitive dust impacts. For these reasons, further analysis (such as dispersion modeling to determine ground-level concentrations) is not warranted for demolition, excavation, and construction activities.

[24] Note that the HARP2 ADMRT manual is made available within the "Help" module of the HARP2 program itself or the *User Manual For the Hotspots Analysis And Reporting Program Air Dispersion Modeling and Risk Assessment Tool Version 2* (CARB 2015).

Table 3.3-14. Criteria Pollutant Emissions from Project Demolition and Construction Compared to the BAAQMD Significance Thresholds

	VOC	NO_X	PM_{10}[a]	$PM_{2.5}$[a]
Average Daily Emissions (lb/day)[b]	9.71	53.5	50.0	9.60
BAAQMD Average Daily Thresholds (lb/day)	54	54	82	54
Exceeds Threshold (Y/N)?	No	No	No	No

[a] These estimates conservatively include fugitive dust emissions, even though the BAAQMD's thresholds are specific to exhaust emissions only.

[b] The BAAQMD's thresholds are for average daily emissions, so the reported results are the total project emissions averaged over the entire construction duration.

As shown in Table 3.3-15, the project would not result in routine facility operational emissions in excess of the BAAQMD significance thresholds. Therefore, the project would not conflict with or obstruct implementation of the *2017 Bay Area Clean Air Plan*. Additionally, as described in Section 3.8, the project will utilize renewable fuels to the maximum extent feasible, which would also demonstrate compliance with initiatives of the *2017 Bay Area Clean Air Plan*.

Table 3.3-15. Criteria Pollutant Emissions from Routine Facility Operation Compared to the BAAQMD Significance Thresholds

Daily Operation	Average Daily Emissions (lb/day)					
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Unmitigated Project Total[a]	28.1	246	21.1	1.26	1.92	1.72
Mitigation[b]	--	--	--	--	--	--
Mitigated Project Total	28.1	246	21.1	1.26	1.92	1.72
BAAQMD Average Daily Thresholds[c]	54	--	54	--	82	54
Exceeds Threshold (Y/N)?	N	N	N	N	N	N
Annual Operation	**Annual Emissions (tpy)**					
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Unmitigated Project Total[a]	5.09	44.2	3.81	0.23	0.35	0.31
Mitigation[b]	--	--	--	--	--	--
Mitigated Project Total	5.09	44.2	3.81	0.23	0.35	0.31
BAAQMD Annual Thresholds[c]	10	--	10	--	15	10
Exceeds Threshold (Y/N)?	N	N	N	N	N	N

[a] For CEQA comparison purposes, the project total includes emissions from all components of the project, including, without limitation, all known and expected activities, such as generator load shedding, demand response and behind the meter RA operation and maintenance and testing, diesel storage tank refueling, operation of cooling units, vehicle trips, and ongoing facility upkeep.

[b] Emissions presented as mitigation are subtracted from the unmitigated project emissions to determine total, mitigated project emissions. As shown, no mitigated emissions are proposed or required for this project.

[c] BAAQMD thresholds of significance taken from Table 2-1 of the *2017 CEQA Air Quality Guidelines* (BAAQMD 2017c).

Note:

-- = No mitigated emissions or BAAQMD threshold

Per BAAQMD's Regulation 2, Rule 2, new sources with a PTE of 10.0 lb/day or more of any single pollutant must be equipped with BACT. As shown in Table 3.3-7, daily VOC, CO, and NO_X emissions from routine operation of the generators exceed the BAAQMD's 10.0 lb/day limit. Accordingly, these sources will be equipped with control systems considered BACT. For the natural gas-fired generators, control will be via a 3-way catalyst system; for the diesel-fired administrative generators, control will be via an SCR System. BAAQMD's Regulation 2, Rule 2 also requires new sources that emit more than 35 tpy of NO_X to fully offset routine emissions at a 1.15:1 ratio. As shown in Table 3.3-7, annual NO_X emissions from routine operation of the generators would total only 2.69 tpy such that offsets are provided by the BAAQMD. The project's annual PM_{10} emissions are far less than the BAAQMD's Regulation 2, Rule 2 limit of 100 tpy. As a result, a cumulative impacts analysis is not required for the project.

Per BAAQMD's policy, *Calculating Potential to Emit for Emergency Backup Power Generators* (BAAQMD 2019), maximum PTE from emergency and routine operation of the project's 224 natural gas generators and 2 administrative generators was calculated as described in Section 3.3.3.2. Under Regulation 2, Rule 6, BAAQMD issues Title V operating permits for new facilities when the estimated PTE of any pollutant is greater than the Title V threshold, typically 100 tpy. The PSD pre-construction permit threshold is a PTE of 250 tpy of any attainment criteria pollutant (except lead) for specific source types not listed in 40 CFR 52.21(b)(1)(i); for listed source types, the threshold is a PTE of 100 tpy. As shown in Table 3.3-16, the maximum PTE from emergency and routine generator operation for all criteria pollutants are less than the major source thresholds. Therefore, the project would not trigger PSD or Title V operating permit requirements.

Table 3.3-16. Criteria Pollutant Emissions from Emergency and Routine Generator Operation

Annual Operation	Annual Emissions (tpy)					
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Generators - Maximum PTE[a]	3.32	51.6	4.25	0.26	0.31	0.31
Title V Thresholds[b]	100	100	100	100	100	100
PSD Thresholds[c]	250	250	250	250	250	250
Exceeds Title V Thresholds (Y/N)?	N	N	N	N	N	N
Exceeds PSD Thresholds (Y/N)?	N	N	N	N	N	N

[a] For permitting comparison purposes, consistent with BAAQMD's new policy (BAAQMD 2019), only the maximum PTE emissions for generators were used to determine PSD applicability.

[b] Title V applicability criteria taken from BAAQMD's Title V Applicability Criteria - Major Facility Website (http://www.baaqmd.gov/permits/major-facility-review-title-v/title-v-applicability-criteria). This criteria is consistent with BAAQMD Regulation 2-2-217, Major Facility.

[c] EPA's PSD Thresholds taken from BAAQMD Regulation 2-2-224, PSD Project.

BAAQMD's Regulation 2, Rule 6 considers sources with a PTE of more than 10 tpy of any single HAP or more than 25 tpy of a combination of HAPs to be major sources, triggering Title V operating permit requirements. As shown in Table 3.3-17, the annual emissions of any single HAP or combination of HAPs, based on both emergency and routine generator operation, will be less than the major source thresholds, such that a Title V operating permit will not be required on the basis of TAC emissions.

Table 3.3-17. TAC Emissions from Emergency and Routine Generator Operation

Pollutant	Annual Emissions (tpy)		
	0.45-MW Natural Gas Generators	1.25-MW Admin Generator	0.5-MW Admin Generator
Maximum Single TAC or HAP (All Generators)	1.51	0.024	0.0025
Total TACs and HAPs (All Generators)	2.21	0.035	0.0065

Table 3.3-17. TAC Emissions from Emergency and Routine Generator Operation

Pollutant	Annual Emissions (tpy)		
	0.45-MW Natural Gas Generators	1.25-MW Admin Generator	0.5-MW Admin Generator
Single HAP Title V Threshold	10	10	10
Combined HAP Title V Threshold	25	25	25
Exceeds Title V Thresholds (Y/N)?	N	N	N

The characterization of TAC emissions used to conduct the operational HRA are described in Section 3.3.5.3. The results are presented in a subsequent section for purposes of demonstrating compliance with BAAQMD's Regulation 2, Rule 5.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. A cumulative impacts analysis assesses the impacts that result from the project's incremental effect viewed over time, together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the project.[25] Additionally, cumulative impacts are assessed in terms of conformance with the BAAQMD's air quality attainment or maintenance plans.

Two significance criteria were used to evaluate this project. First, all project emissions of nonattainment criteria pollutants and their precursors (NO_X, VOCs, PM_{10}, $PM_{2.5}$, and SO_2) are considered significant cumulative impacts that must be mitigated. Second, any ambient air quality standard exceedance or any contribution to an existing ambient air quality standard exceedance caused by project emissions is considered to be significant and must be mitigated. For demolition, excavation, and construction emissions, available mitigation is limited to controlling both construction equipment tailpipe emissions and fugitive dust emissions to the maximum extent feasible. For operational emissions, available mitigation includes feasible emission controls (such as BACT).

For a project that does not individually have significant operational air quality impacts, the determination of a significant cumulative air quality impact is based upon an evaluation of the consistency of the project with the local general plan and of the general plan with the most current Clean Air Plan (BAAQMD 2017c). As stated previously, the project would not result in demolition, excavation, and construction or operational emissions in excess of the BAAQMD significance thresholds identified in Table 3.3-2, with incorporation of all feasible mitigation measures. Thus, the project would not be expected to conflict with the *2017 Bay Area Clean Air Plan*, and a cumulative impact analysis is not warranted.

Pollutants for which the region is designated as attainment, maintenance, or unclassified were evaluated by comparing the modeled concentration for each pollutant and averaging period, with the incorporation of background, to the applicable NAAQS or CAAQS. If the result is less than the applicable NAAQS or CAAQS, the project would be considered to have a less-than-significant impact for pollutants for which the region is in attainment.

The dispersion modeling analysis for attainment pollutants was conducted as described in Section 3.3.4, with results compared to the NAAQS and CAAQS in Tables 3.3-18 and 3.3-19, respectively. As summarized in Table 3.3-18, the total predicted concentrations for PM_{10} (24-hour),

[25] California Public Resources Code Section 21083 and 14 CCR 15064(h), 15065(c), 15130, and 15355.

$PM_{2.5}$ (annual), CO (1-hour and 8-hour), SO_2 (1-hour, 3-hour, 24-hour, and annual), and NO_2 (1-hour and annual) are less than the respective NAAQS under all three generator load scenarios. Therefore, routine operation of the project will not cause an exceedance of the NAAQS and the impact would be less than significant.

Table 3.3-18. Comparison of Modeled Results with Background to the National Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration ($\mu g/m^3$)[h]	Background Concentration ($\mu g/m^3$)[a]	Total Predicted Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Met Year(s) of Modeled Impact
100% Load Scenario						
PM_{10}	24-hour[b]	3.13	134	137.1	150	2017
$PM_{2.5}$	Annual[c]	0.06	11.17	11.2	12	2013-2017
CO	1-hour[d]	1,723	2,864	4,587	40,000	2017
	8-hour[d]	963	2,406	3,369	10,000	2017
SO_2	1-hour[e]	8.6	6.11	14.7	196	2013-2017
	3-hour[f]	6.82	38	44.8	1,300	2017
	24-hour[f]	3.21	3.93	7.1	365	2016
	Annual[f]	0.06	0.55	0.6	80	2017
NO_2	Annual[f]	0.58	22.7	23.3	100	2013
	1-hour[g]	76.7	97.8	174.5	188	2013-2017
75% Load Scenario						
PM_{10}	24-hour[b]	2.72	134	136.72	150	2016
$PM_{2.5}$	Annual[c]	0.06	11.167	11.22	12	2013-2017
CO	1-hour[d]	1,446	2,864	4,310	40,000	2017
	8-hour[d]	826	2,406	3,232	10,000	2017
SO_2	1-hour[e]	7.33	6.11	13.44	196	2013-2017
	3-hour[f]	5.85	38	43.85	1,300	2017
	24-hour[f]	2.78	3.93	6.71	365	2016
	Annual[f]	0.06	0.55	0.61	80	2013
NO_2	Annual[f]	0.52	22.7	23.22	100	2013
	1-hour[g]	64.2	97.8	162	188	2013-2017
50% Load Scenario						
PM_{10}	24-hour[b]	2.21	134	136.21	150	2017
$PM_{2.5}$	Annual[c]	0.05	11.167	11.21	12	2013-2017
CO	1-hour[d]	1,089	2,864	3,953	40,000	2017
	8-hour[d]	644	2,406	3,050	10,000	2017
SO_2	1-hour[e]	5.93	6.11	12.04	196	2013-2017
	3-hour[f]	4.78	38	42.78	1,300	2017
	24-hour[f]	2.53	3.93	6.46	365	2017
	Annual[f]	0.05	0.55	0.60	80	2013

Table 3.3-18. Comparison of Modeled Results with Background to the National Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration (µg/m³)[h]	Background Concentration (µg/m³)[a]	Total Predicted Concentration (µg/m³)	NAAQS (µg/m³)	Met Year(s) of Modeled Impact
NO_2	Annual[f]	0.43	22.7	23.13	100	2013
	1-hour[g]	48.2	97.8	146	188	2013-2017

Notes:

[a] Background concentrations from Table 3.3-1c were used to estimate the total predicted concentrations.

[b] The total predicted concentration for the 24-hour PM_{10} standard is the 6th-highest value over the five modeled years (2013-2017) combined with the maximum background concentration.

[c] The total predicted concentration for the annual $PM_{2.5}$ standard is the maximum 5-year average modeled concentration combined with the 3-year average background concentration.

[d] The total predicted concentrations for the 1-hour and 8-hour CO standards are the high-2nd-high modeled concentrations of the 5 individual years modeled (2013-2017) combined with the maximum background concentrations.

[e] The total predicted concentration for the 1-hour SO_2 standard is the high-4th-high modeled concentration averaged over 5 years combined with the 3-year average background concentration.

[f] The total predicted concentrations for the annual SO_2, 3-hour SO_2, 24-hour SO_2, and annual NO_2 standards are the highest modeled concentrations of the 5 individual years modeled (2013-2017) combined with the maximum background concentrations.

[g] The 1-hour NO_2 maximum modeled concentration accounts for an ARM2 chemistry of an ISR of 0.1 and an out-of-stack ratio of 0.9, which were included within the model. The total predicted concentration for the 1-hour NO_2 standard is the maximum 5-year average modeled concentration combined with the 3-year average background concentration.

[h] The maximum modeled concentrations result from all sources operating at the specified load.

[i] The meteorological years used for all pollutant averaging periods in this analysis were 2013 through 2017.

As summarized in Table 3.3-19, total predicted concentrations for CO (1-hour and 8-hour), SO_2 (1-hour and 24-hour), and NO_2 (1-hour and annual) were also less than the CAAQS under all three generator load scenarios. Therefore, routine operation of the project will not cause an exceedance of the CAAQS and the impact would be less than significant.

Table 3.3-19. Comparison of Modeled Results with Background to the California Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration (µg/m³)[a, d]	Background Concentration (µg/m³)[b]	Total Predicted Concentration (µg/m³)	CAAQS (µg/m³)	Met Year(s) of Modeled Impact[e]
100% Load Scenario						
CO	1-hour	1,745	2,864	4,609	23,000	2017
	8-hour	1,055	2,406	3,461	10,000	2014
SO_2	1-hour	8.9	38	47	655	2017
	24-hour	3.2	3.93	7	105	2016
NO_2[c]	Annual	0.6	22.7	23	57	2013
	1-hour	142.9	162	305	339	2014
75% Load Scenario						
CO	1-hour	1,465	2,864	4,329	23,000	2017
	8-hour	899	2,406	3,305	10,000	2017

Table 3.3-19. Comparison of Modeled Results with Background to the California Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration ($\mu g/m^3$)[a, d]	Background Concentration ($\mu g/m^3$)[b]	Total Predicted Concentration ($\mu g/m^3$)	CAAQS ($\mu g/m^3$)	Met Year(s) of Modeled Impact[e]
SO_2	1-hour	7.64	38.0	45.6	655	2017
	24-hour	2.78	3.9	6.7	105	2016
NO_2[c]	Annual	0.52	22.7	23.2	57	2013
	1-hour	142.61	162.0	304.6	339	2014
50% Load Scenario						
CO	1-hour	1,106	2,864	3,970	23,000	2017
	8-hour	705.87	2,406	3,112	10,000	2017
SO_2	1-hour	6.21	38.0	44.21	655	2017
	24-hour	2.53	3.9	6.46	105	2017
NO_2[c]	Annual	0.43	22.7	23.13	57	2013
	1-hour	141.88	162.0	303.88	339	2014

Notes:

[a] The maximum modeled concentration for each pollutant and averaging period are the high-1st-high concentrations for comparison to the CAAQS.

[b] Maximum background concentrations from Table 3.3-1c were used to estimate the total predicted concentrations.

[c] The 1-hour NO_2 maximum modeled concentration accounts for an ARM2 chemistry of an ISR of 0.1 and an out-of-stack ratio of 0.9, which were included within the model.

[d] The maximum modeled concentrations result from all sources operating at the specified load.

[e] The meteorological years used for all pollutant averaging periods in this analysis were 2013 through 2017.

For pollutants for which the area is designated nonattainment for either the NAAQS or CAAQS (ozone, PM_{10}, and $PM_{2.5}$), a dispersion modeling analysis to determine impacts relative to the applicable attainment status was not required for several reasons. First, the estimated mass daily emissions from routine operation of the facility will not exceed the daily significance thresholds for ozone precursors (NO_X and VOC), direct emissions of PM_{10}, or direct emissions of $PM_{2.5}$, as shown in Table 3.3-15. Second, the estimated annual emission rates will not exceed the significant emission rates identified in BAAQMD Regulation 2, Rule 2, which would trigger the need for an air impact analysis. Lastly, the monitored background concentrations in the area already exceed their respective standards (see Table 3.3-1c). Therefore, the project's increases in emissions of ozone precursors (NO_X and VOC), direct PM_{10}, and direct $PM_{2.5}$ would not be considered cumulatively considerable and will have a less-than-significant impact on nonattainment pollutants. This less-than-significant impact is further supported by the project adhering to applicable plans (BAAQMD 2021) and BAAQMD's permitting regulations for these pollutants, which would require emissions offsets if the project's impacts were considered significant.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The location of the project is a major factor in determining whether it would result in localized air quality impacts to sensitive receptors. The potential for adverse air quality impacts increases as the distance between the source of emissions and sensitive receptor locations decreases. Impacts on sensitive receptors are of particular concern, because sensitive receptors include children, the elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptor locations.

As previously noted, the BAAQMD's CEQA Guidelines establish numerical criteria for determining when a health risk increase is deemed cumulatively considerable, thus triggering the need for a quantitative cumulative impacts assessment. If a project does not exceed the identified significance thresholds, its health risks would not be cumulatively considerable, resulting in less than significant health risk impacts to existing regional conditions.

Sensitive receptor exposure to TACs was evaluated by conducting a screening HRA for demolition, excavation, and construction activities and a complete HRA for routine facility operation, as described in Section 3.3.5. The HRAs for the project were conducted consistent with the following guidance: *Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015); *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines* (BAAQMD 2016); 2017 CEQA Guidelines (BAAQMD 2017c); and *Recommended Methods for Screening and Modeling Local Risks and Hazards* (BAAQMD 2012).

The results of the screening HRA for demolition, excavation, and construction activities are presented in Table 3.3-20 and show that the excess lifetime cancer risks and chronic HIs at the MEIR, MEIW, and MESR are less than the BAAQMD's significance thresholds of 10 in 1 million and 1, respectively. Therefore, predicted impacts associated with the project demolition and construction activities are not cumulatively considerable, and result in less-than-significant health risk impacts. It should be noted that these less-than-significant impacts are conservative, given the conservative assumptions used in developing the DPM emission estimates and the DPM cancer potency safety factor inherent in OEHHA's calculations. Detailed health risk calculations are provided in Appendix 3.3D.

Table 3.3-20. Health Risks for Exposure to Demolition and Construction Emissions at the Maximally Exposed Individual Receptors

Receptor Type	MEIR	MEIW	MESR	BAAQMD Threshold
Cancer Risk Impact (in 1 million)	4.13	0.37	0.48	10
Chronic Non-cancer HI	0.003	0.015	0.0003	1

The results of the HRA for routine facility operation are presented in Table 3.3-21 and show that the excess lifetime cancer risk and chronic and acute non-cancer HIs at each of the MEIR, MEIW, and MESR are less than the BAAQMD's significance thresholds of 10 in 1 million and 1, respectively. Additionally, as shown in Table 3.3-18, the project's incremental increase in annual average $PM_{2.5}$ concentration is 0.06 µg/m^3, which is less than the BAAQMD's significance threshold of 0.3 µg/m^3. Therefore, predicted impacts associated with routine facility operation are not cumulatively considerable, and result in less-than-significant health risk impacts. Additional details are provided in Appendix 3.3E.

Table 3.3-21. Health Risks Estimated for Exposure to Project-Related Operational Emissions at the Maximally Exposed Individual Receptors

Receptor Type	MEIR	MEIW	MESR	BAAQMD Threshold
Cancer Risk Impact (in 1 million)	0.30	0.27	0.11	10
Chronic Non-cancer HI	1.15E-04	1.01E-03	4.17E-05	1
Acute Non-cancer HI	4.98E-03	4.98E-03	6.50E-04	1

As shown in Table 3.3-21, cancer and non-cancer risks resulting from routine facility operation are also below the TBACT thresholds of 1 in 1 million for incremental cancer risk and 0.20 for chronic

non-cancer HI. Therefore, an HRA for operation of a single emission unit was not conducted. Nevertheless, as stated previously, each of the natural gas generators will be equipped with a 3-way catalyst system and each of the administrative generators will be equipped with an SCR System, which is considered TBACT. Therefore, the project will comply with BAAQMD Regulation 2, Rule 5 and result in less-than-significant health risk impacts.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. The BAAQMD states that, while offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the BAAQMD. Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact. Odor impacts on residential areas and other sensitive receptors warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Determining the significance of potential odor impacts involves a two-step process. First, it should be determined whether the project would result in an odor source and receptors being located within the distances indicated in Table 3.3-22. Table 3.3-22 also lists types of facilities known to emit objectionable odors. Second, if the project would result in an odor source and receptors being located closer than the screening level distances indicated in Table 3.3-22, a more detailed analysis should be conducted, as described in the BAAQMD's CEQA Guidelines (BAAQMD 2017c).

Given its nature as a data center, the project will not be an operational odor source listed in Table 3.3-22, and this type of project is not known to cause any significant odor impacts. Odor impacts from project operations would be similar to those from existing odor sources in the vicinity of the project site, which include heavy and light industrial uses. A further evaluation of this facility is not warranted by any local conditions or special circumstances. Therefore, the project would not create objectionable odors affecting a substantial number of people.

Potential odor sources during demolition, excavation, and construction activities include diesel exhaust from heavy-duty equipment. Demolition, excavation, and construction-related odors near existing receptor locations would be temporary in nature and dissipate as a function of distance. Potential odor sources from routine project operations would include diesel exhaust from engine testing, trash pick-up, or heavy-duty delivery vehicles and the occasional use of architectural coatings during routine maintenance. Accordingly, demolition, excavation, construction, and operation of the project is not expected to result in odor impacts that would exceed BAAQMD's odor thresholds.

Table 3.3-22. Project Screening Trigger Levels for Potential Odor Sources

Type of Operation	Project Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting and Coating Operations (for example, auto body shops)	1 mile

Table 3.3-22. Project Screening Trigger Levels for Potential Odor Sources

Type of Operation	Project Screening Distance
Rendering Plant	2 miles
Food Processing Facility	1 mile
Confined Animal Facility, Feed Lot, or Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles
Coffee Roaster	1 mile

Source: BAAQMD 2017c

Previously Identified Mitigation Measures:

None.

New Proposed Mitigation Measures:

None.

3.3.7 References

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3.4 Biological Resources

This section describes biological resources (vegetation, fish, wildlife, and wetlands) in the study area; identifies potential impacts on sensitive habitats and species that could result from the implementation of the project; and concludes that impacts on biological resources will be less than significant with mitigation proposed as identified in the Mitigation Measures described in Section 3.4.2. The project's potential effects on biological resources were evaluated using the significance criteria set forth in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The conclusions are summarized in Table 3.4-1 and are discussed in more detail in Section 3.4.3.

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

3.4.1 Setting

The San José Data Center (SJC) will be located within the City of San José on an approximately 64.5-acre site and will consist of two data center buildings totaling over approximately 396,914 square feet of space. The project will include 224 0.45-megawatt (MW) natural gas-fired generators to provide electrical power to support the electrical load of the data center buildings during utility outages or certain onsite electrical equipment interruptions or failures. Additionally, the use of the natural gas generators will enable the SJC to provide grid support through load shedding, demand response, and behind-the-meter Resource Adequacy (RA) ancillary services. In addition to these generators, the project will include two administrative Tier IV diesel-powered generators, rated at 1.25 MW and 0.5 MW, to support administrative functions during an interruption in the normal delivery of electrical power from the utility.

The project site has been used historically for farming since the early 1920s but is not currently in agricultural use and no dwellings or structures exist onsite[1]. To the north of the project site are the San José/Santa Clara Regional Wastewater Treatment Plant sludge drying beds, to the south is Highway 237, to the west is the Los Esteros Critical Energy Facility (LECEF), a PG&E substation, and to the east is Coyote Creek. The project is anticipated to begin construction in the 4th quarter of 2022, with operations beginning in the 1st quarter of 2024.

3.4.2 Regulatory Background and Methodology

3.4.2.1 Regulatory Background

This section summarizes existing federal, state, and local laws, policies, and regulations that pertain to biological resources.

Federal

Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 (16 USC 1531–1544), as amended, protects plants, fish, and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). Section 9 of the ESA prohibits the "take" of listed fish and wildlife, where "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 *Code of Federal Regulations* [CFR] 17.3). For plants, this statute prohibits removing, possessing, maliciously damaging, or destroying any listed plant *under federal jurisdiction* and removing, cutting, digging-up, damaging, or destroying any listed plant in knowing violation of state law (16 United States Code [USC] 1538).

The ESA allows for issuance of incidental take permits to private parties either in conjunction with a Habitat Conservation Plan (HCP) or as part of a Section 7 consultation (which is discussed in the following paragraph). Under Section 10 of the ESA, a private party may obtain incidental take coverage by preparing an HCP to cover target species within the project area; identifying impacts to the covered species; and presenting the measures that will be undertaken to avoid, minimize, and mitigate such impacts.

Under Section 7 of the ESA, federal agencies are required to consult with USFWS or NOAA Fisheries, or both, as applicable, if their actions—including permit approvals or funding—may affect a federally listed species (including plants) or designated critical habitat. If the project is likely to adversely affect a species,

1 There were 2 vacant residences and a storage shed/warehouse onsite, which were demolished in 2021 after a fire significantly affected the safety of one of the dwellings.

the federal agency will initiate formal consultation with the USFWS or NOAA Fisheries, or both, and issue a biological opinion as to whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or adversely modify critical habitat (adverse modification). As part of the biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided that the action will not jeopardize the continued existence of the species or adversely modify designated critical habitat.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711) protects all migratory birds, including active nests and eggs. Birds protected under the MBTA include all native waterfowl, shorebirds, hawks, eagles, owls, doves, and other common birds such as ravens, crows, sparrows, finches, swallows, and others, including their body parts (for example feathers and plumes), active nests, and eggs. A complete list of protected species can be found in 50 CFR 10.13. Enforcement of the provisions of the federal MBTA is the responsibility of USFWS.

Waters and Wetlands: Clean Water Act Sections 401 and 404

The purpose of the Clean Water Act (CWA) (33 USC Section 1251 *et seq*.) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Waters of the United States include rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3).

The U.S. Army Corps of Engineers (USACE) issues permits for work in wetlands and other waters of the United States based on guidelines established under Section 404 of the CWA. Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the United States, including wetlands, without a permit from USACE. U.S. Environmental Protection Agency (EPA) also has authority over wetlands and may, under Section 404(c), veto a USACE permit.

Section 401 of the CWA requires all Section 404 permit actions to obtain a state Water Quality Certification or waiver, as described in more detail in Section 3.9, Hydrology and Water Quality.

In 2015, USACE and EPA issued the Clean Water Rule (2015 Rule), intended to clarify areas under the jurisdiction of the CWA. The 2015 Rule was stayed in court rulings soon afterwards. On February, 2017, an Executive Order was issued regarding the 2015 Rule. The Executive Order and the subsequent EPA and USACE Proposed Rule called for the 2015 Rule to be reviewed and rescinded or revised in accordance with the Executive Order. On August 16, 2018, the U.S. Court of Appeals for the Sixth Circuit stay was enjoined by the U.S. District Court for South Carolina. USACE and EPA are reviewing the August 16, 2018, District Court order enjoining the suspension to determine next steps; however, the 2015 Rule is currently in effect in 26 states, including the State of California.

State

California Endangered Species Act

Sections 2050–2098 of the California Fish and Game Code (the California Endangered Species Act [CESA]) prohibit the take of state-listed endangered and threatened species unless specifically authorized by the California Department of Fish and Wildlife ([CDFW]). The state definition of “take” is to hunt, pursue, catch, capture, or kill a member of a listed species or attempt to do so. CDFW administers CESA and authorizes take through permits or memorandums of understanding issued under Section 2081 of CESA, or through a consistency determination issued under Section 2080.1. Section 2090 of CESA requires state agencies to comply with threatened and endangered species protection and recovery and to promote conservation of these species.

Fully Protected Species Under the Fish and Game Code

The Fish and Game Code designates certain fish and wildlife species as “fully protected” under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). Fully protected species may not be taken or possessed at any time, and no permits may be issued for incidental take of these species.

Protection for Birds: Fish and Game Code

The Fish and Game Code Section 3503 *et seq*. states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird.

Native Plant Protection Act of 1973

The Native Plant Protection Act of 1973 (Fish and Game Code Sections 1900–1913) includes provisions that prohibit the taking of endangered or rare native plants. CDFW administers the Native Plant Protection Act of 1973 and generally regards as rare many plant species included on the California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B of the California Native Plant Society [CNPS]) Inventory of Rare and Endangered Vascular Plants of California. In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance in the area and is impacted by the project.

Section 1913(b) includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a right-of-way to allow a public utility to fulfill its obligation to provide service to the public.

California Species of Special Concern

Species of Special Concern (SSC) is a category conferred by CDFW to fish and wildlife species that meet the state definition of threatened or endangered, but have not been formally listed (e.g., federally or state-listed species), or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. SSC is an administrative classification only, but these species should be considered “special-status” for the purposes of the CEQA analysis (see the Significance Criteria section of this document).

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over all surface water and groundwater in California, including wetlands, headwaters, and riparian areas. The SWRCB or applicable RWQCB must issue waste discharge requirements for any activity that discharges waste that could affect the quality of waters of the state.

Local

Santa Clara Valley Habitat Plan

The Santa Clara Valley Habitat Conservation Plan (SCVHCP), which primarily covers southern Santa Clara County, as well as the City of San José with the exception of the bayland areas. The SCVHCP addresses listed species and species that are likely to become listed during the plan's 50-year permit term. The covered species include nine plants and nine animals. The SCVHCP requires that the agencies comment on reportable interim projects and recommend mitigation measures or project alternatives that would help achieve the preliminary conservation objectives and not preclude important conservation planning options or connectivity between areas of high habitat value.

The project is considered a covered project under the SCVHCP. As a result, the project would be subject to conditions and fees of the SCVHCP, which will be calculated at the time the project submits an application, which corresponds to application timing of grading and/or building permits. The onsite portion of the development area and offsite utility alignments are within Fee Zone A: Ranchlands and Natural Lands. In addition, a Nitrogen Deposition Fee and temporary impact fees are expected to be assessed for the proposed project pursuant to applicable provisions of the SCVHCP.

The SCVHCP also includes conditions that would apply to the project, which have been incorporated as enforceable project design measures described in this document.

Envision San José 2040 General Plan

The Envision San José 2040 General Plan (General Plan) aims to protect biological resources when properties are developed in San José. Generally, similar types of requirements occur in the General Plan as in the SCVHCP. The General Plan includes several policies with respect biological protections that are relevant to this analysis including, but not limited to, the following (City of San José 2011):

- Policy MS-21.4: Encourage the maintenance of mature trees, especially natives, on public and private property as an integral part of the community forest. Prior to allowing the removal of any mature tree, pursue all reasonable measures to preserve it.
- Policy MS-21.5: As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Avoid any adverse effect on the health and longevity of protected or other significant trees through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks and native sycamores. When tree preservation is not feasible, include appropriate tree replacement, both in number and spread of canopy.
- Policy MS-21.6: As a condition of new development, require, where appropriate, the planting and maintenance of both street trees and trees on private property to achieve a level of tree coverage in compliance with and that implements City laws, policies or guidelines.
- Policy MS-21.9: Where urban development occurs adjacent to natural plant communities (e.g., oak woodland, riparian forest), landscape plantings shall incorporate tree species native to the area and propagated from local sources (generally from within 5-10 miles and preferably from within the same watershed).
- Policy ER-1.4: Minimize the removal of ecologically valuable vegetation such as serpentine and non-serpentine grassland, oak woodland, chaparral, and coastal scrub during development and grading for projects within the City.
- Policy ER-1.5: Preserve and protect oak woodlands, and individual oak trees. Any loss of oak woodland and/or native oak trees must be fully mitigated.
- Policy ER-1.7: Prohibit planting of invasive non-native plant species in oak woodlands, grasslands, chaparral and coastal scrub habitats, and in hillside areas.
- Policy ER-4.1: Preserve and restore, to the greatest extent feasible, habitat areas that support special status species. Avoid development in such habitats unless no feasible alternatives exist, and mitigation is provided of equivalent value.
- Policy ER-4.2: Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.
- Policy ER-4.3: Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.
- Policy ER-4.4: Require that development projects incorporate mitigation measures to avoid and minimize impacts to individuals of special-status species.

- Policy ER-5.2: Require that development projects incorporate measures to avoid impacts to nesting migratory birds.
- Policy ER-6.3: Employ low-glare lighting in areas developed adjacent to natural areas, including riparian woodlands. Any high-intensity lighting used near natural areas will be placed as close to the ground as possible and directed downward or away from natural areas.
- Policy ER-6.6: Encourage the use of native plants in the landscaping of developed areas adjacent to natural lands.
- Policy ER-6.8: Design and construct development to avoid changes in drainage patterns across adjacent natural areas and for adjacent native trees, such as oaks.
- Policy ER-6.10: Update the Riparian Corridor Policy Study and all City design guidelines based on guidance from Responsible Agencies on best practices for lighting to protect sensitive habitats and species, including birds and bats.

The General Plan also includes the following policies related to bird-safe design (City of San José 2011):

- Policy ER-7.1: In the area north of Highway 237, design and construct buildings and structures using bird-friendly design and practices to reduce the potential for bird strikes for species associated with the baylands or riparian habitats of lower Coyote Creek.
- Policy ER-7.6: Update the Riparian Corridor Policy Study and City of San José design guidelines based on guidance from Responsible Agencies and other interested organizations on best practices for avoiding and minimizing bird strikes at new tall buildings.

Alviso Master Plan

The Vegetation and Wildlife section of the Alviso Master Plan (City of San José 1998) identifies existing habitats in the Plan area, of which the project site is a part. These habitats include seasonal wetlands, agricultural fields, and riparian areas along and aquatic conditions within Coyote Creek. Special status animal species, including burrowing owls, are acknowledged to be within the Plan area and could be affected by future development.

Policies within the Plan, pertinent to the proposed project and linear features include those that respect and complement the natural setting, marshlands, waterways, trails, and other amenities of Alviso, as described in the following:

- Environmental Protection Policy 1: All new parking, circulation, loading, outdoor storage, utility, and other similar activity areas must be located on paved surfaces with proper drainage to avoid potential pollutants from entering the groundwater, Guadalupe River, Coyote Creek, or San Francisco Bay.
- Environmental Protection Policy 3: The riparian corridors adjacent to Coyote Creek and Guadalupe River should be preserved intact. Any development adjacent to the waterways should follow the City's Riparian Corridor policies.
- Environmental Protection Policy 4: To mitigate the loss of specific wildlife habitat due to development, certain lands should be set aside to provide needed habitat.

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

The City of San José has a riparian buffer policy that is administered through the Riparian Corridor Policy Study (City of San José 1994). In addition, Council Policy 6-34 became effective on August 23, 2016. The purpose of Council Policy 6-34 is to provide guidance consistent with the goals, policies, and actions of the City's General Plan for 1) protecting, preserving, or restoring riparian habitat; 2) limiting the creation of new impervious surface within riparian corridor setbacks to minimize flooding from urban run-off, and control erosion; and 3) encouraging bird-safe design in baylands and riparian habitats of lower Coyote Creek, north of State Route 237. This policy supplements the regulations for riparian corridor protection

already contained within the SCVHCP, Municipal Code, and other existing City policies that may provide for riparian protection and bird-safe design.

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

- Avoid use of mirrors and large areas of reflective glass.
- Avoid use of transparent glass skyways, walkways, or entryways, free-standing glass walls, and transparent building corners.
- Avoid funneling open space to a building façade.
- Strategically place landscaping to reduce reflection and views of foliage inside or through glass.
- Avoid or minimize up-lighting and spotlights.
- Turn non-emergency lighting off, or shield it, at night to minimize light from buildings that is visible to birds, especially during bird migration season (February through May and August through November).

Ordinance-Size Trees

The City of San José has a Tree Ordinance (Chapter 13.32 of the Municipal Code), which regulates the removal of trees. An “ordinance-size tree” is defined as any native or non-native tree species with a circumference of 56 inches (diameter of 18 inches) at 24 inches above the natural grade of slope. A tree removal permit is required from the City prior to the removal of any trees covered under the ordinance. Prior to the issuance of a tree removal permit, the City requires that a formal tree survey be conducted, which indicates the number, species, trunk circumference, and location of all trees that will be removed or impacted by the project.

3.4.2.2 Methodology

This section summarizes the methods used to identify and analyze potential impacts on special-status species that may occur in the study area. The study area is defined here as the project site, associated offsite linear features (including roadway improvements, utilities and bike trail) that would be disturbed in order to construct and operate the Project, plus a 150-foot buffer of these areas.

As described in the following paragraphs, qualified biologists began their research with a database searches and literature reviews to determine which special-status plants, natural communities, and wildlife might have potential to occur in the study area.

Species Considered to be of Special Status

Special-status species include the following:

- Listed or candidates for listing as threatened or endangered under the federal ESA or CESA
- Plants included in the online version of the CNPS Inventory of Rare and Endangered Plants of California as CRPR 1A, 1B, 2A, or 2B
- Fish or wildlife designated as a Species of Special Concern or a Fully Protected species by the CDFW
- Migratory birds with active nests, defined as containing eggs or dependent young

Database Searches

The following biological databases were queried for records of special-status plants, natural communities, and wildlife that might have potential to occur in the study area:

- USFWS list of federally listed and proposed endangered, threatened, and candidate species and their designated critical habitat (USFWS 2019; CDFW 2019a)
- CNPS online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2019; CDFW 2019a)
- California Natural Diversity Database (CDFW 2019a)
- Species List of NOAA Fisheries Resources in California (NOAA 2019)

A California Natural Diversity Database (CNDDB) search for special-status species was conducted for a 5-mile buffer around the study area (CDFW 2019a). The USFWS database was queried for federally-listed species and critical habitat using the USFWS Information Planning and Consultation (IPaC) tool for the study area (USFWS 2019; CDFW 2019a). The CNPS database was queried for Milpitas U.S. Geological Survey (USGS) 7.5 minute quadrangle in which the project site occurs, and for the eight surrounding quadrangles (Newark, Niles, La Costa Valley, Mountain View, Calaveras Reservoir, Cupertino, San José West, and San José East) (CNPS 2019; CDFW 2019a).

Other information sources consulted as part of conducting this analysis included the following:

- City of San José Draft Environmental Impact Report, 237 Industrial Center Project (City of San José 2017) (2017 EIR). This report includes the following:
  - Technical Biological Report (Live Oak Consultants 2017)
  - Tree Survey (HMH Engineers 2015)
- Santa Clara Valley HCP (County of Santa Clara et al. 2012)
- Aerial photographs (Google 2019)

Using this information, the biologists conducted detailed field surveys of the biological resources survey area (as that term is defined below), as detailed in the following subsections.

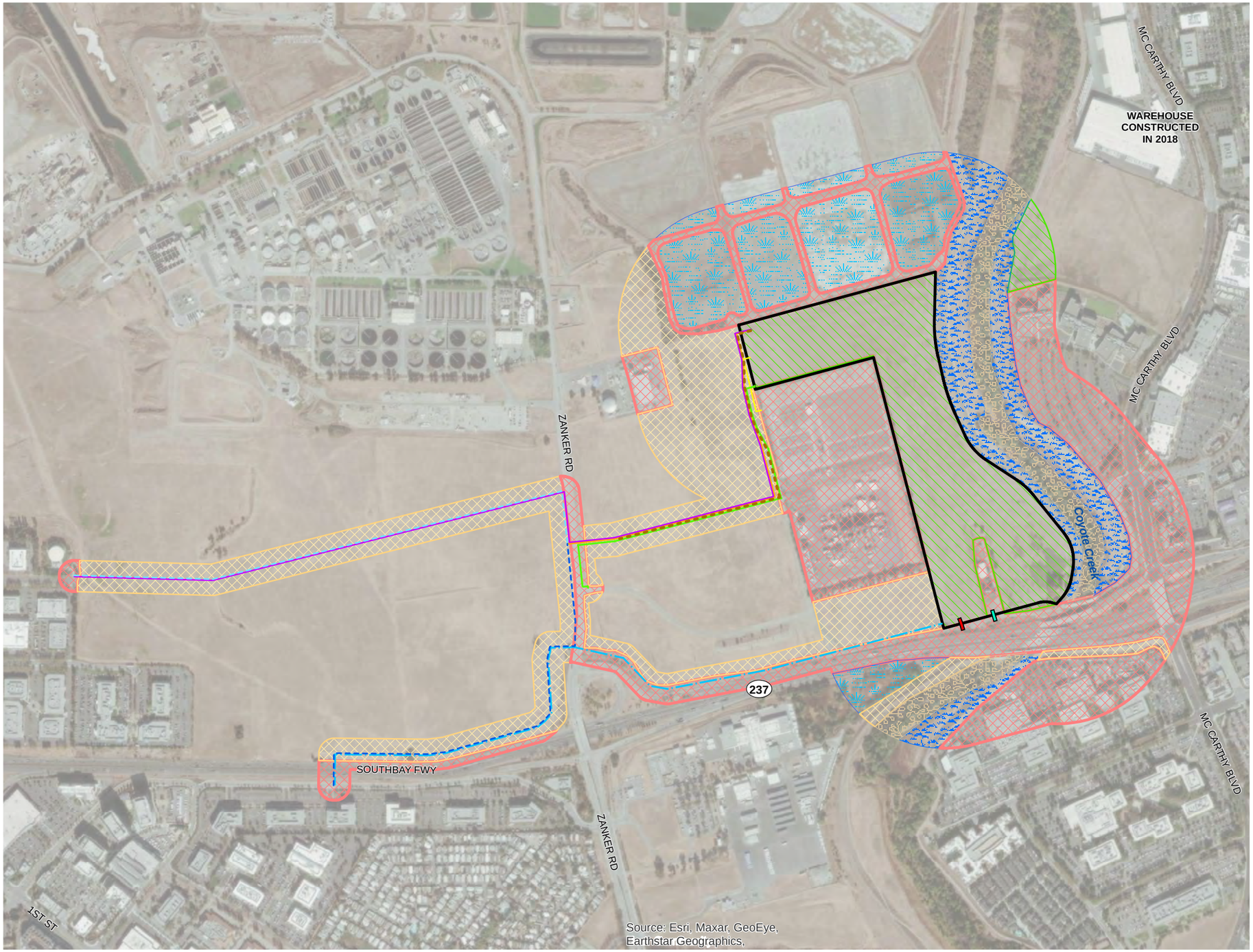
Field Surveys

Biologists conducted reconnaissance surveys of all relevant non-developed areas in the biological survey area (BSA or study area) that were publicly accessible, as explained in the following section. No protocol-level surveys, focused surveys, or aquatic resources delineation surveys were conducted. Per the project design measures BIO-1.1, BIO-1.2, BIO-2.2, and BIO-5.2 (discussed in Section 3.4.5, Proposed Mitigation Measures[2] to be Incorporated for the Project), pre-construction surveys for nesting migratory birds (including raptors, tricolored blackbirds, and burrowing owl), and an aquatic resources delineation will be completed prior to construction.

Reconnaissance Surveys

The BSA shown on Figure 3.4-1R and is defined as the onsite areas and associated offsite extensions of utilities and roadways that would be disturbed in order to implement the project, plus a 150-foot buffer of these areas. A 150-foot buffer of the onsite areas and associated offsite extensions of utilities and roadways was included to confirm that biological surveys accounted for biological resources immediately adjacent to the project site. General biological reconnaissance surveys entailed walking and meandering transects in publicly accessible non-developed portions of the BSA, and surveying areas that appeared to

[2] Mitigation measures discussed throughout will be implemented as project design measures and are consistent with those included in the City of San José Draft Environmental Impact Report, 237 Industrial Center Project (City of San José 2017)and have been included as project design measures.



LEGEND

- Agricultural field (short-term fallowed)
- Annual Grassland
- Coyote Creek Riparian Floodplain
- Coyote Creek Riparian Woodland
- Developed
- Wetland
- Project Site
- Proposed Storm Drain
- Proposed Gas Line #1
- Proposed Gas Line #2
- Proposed Sanitary Sewer
- Proposed Reclaimed Water
- Proposed Water Line Route #1
- Proposed Water Line Route #2
- Proposed Water Line Route #3
- Proposed Shared Water Line
- Proposed Electrical Supply Line

Image Date:
11/4/2019

N

0 750 1,500

Approximate scale in feet

Figure 3.4-1R
Habitat Types
San José Data Center
San José, California

JACOBS

\\DC1VS01\GISPROJ\L\LIGHTSPEED\SJDC\MAPS\REPORT\2021\FIG3_04-1R_BIOLOGY_HABITAT.MXD 8/10/2021 12:06:55 PM

support special-status fauna and flora as identified in desktop-level reviews. The portion of the utility extension between Zanker Road and Nortech Parkway was enclosed behind a locked fence and not accessible. This area was visually surveyed from the fence boundary.

The following tasks were conducted during the reconnaissance-level surveys:

- Plant communities and habitat types were identified in the BSA and evaluated for special-status plant suitability.
- Baseline data were collected for wildlife special-status species. Habitat for various special-status species was observed and recorded. Uplands and aquatic features in the BSA were evaluated to determine habitat suitability and potential jurisdictional status.

Likelihood of Presence for Special-Status Species

Using the information generated from literature reviews and field surveys, the list of special-status species with the potential to occur within the BSA/study area??onsite was further refined to reflect the species that may occur within the study area more generally. The likelihood of special-status species occurrence was determined based on natural history parameters, including, but not limited to, the species' range, habitat, foraging needs, migration routes, and reproductive requirements, using the following general categories:

- *Present* – Reconnaissance-level, focused, or protocol-level surveys documented the occurrence or observation of a species in the study area.
- *Likely to occur (onsite)* – The species has a strong likelihood to be found in the study area prior to or during construction but has not been directly observed to date during project surveys. The likelihood that a species may occur is based on the following considerations: suitable habitat that meets the life history requirements of the species is present on or near the study area; migration routes or corridors are near or within the study area; records of sighting are documented on or near the study area; and there is an absence of invasive predators (e.g., bullfrogs). The main assumption is that records of occurrence have been documented within or near the study area, the study area falls within the range of the species, and suitable habitat is present; however, it is undetermined whether the habitat is currently occupied.
- *Potential to occur* – There is a possibility that the species can be found in the study area prior to or during construction but has not been directly observed to date. The likelihood that a species may occur is based on the following conditions: suitable habitat that meets the life history requirements of the species is present on or near the study area; migration routes or corridors are near or within the study area; and there is an absence of invasive predators (e.g., bullfrogs). The main assumption is that the study area falls within the range of the species and suitable habitat is present, but that no records of sighting are located within or near the study area and it is undetermined whether the habitat is currently occupied.
- *Unlikely to occur* – The species is not likely to occur in the study area based on the following considerations: lack of suitable habitat and features that are required to satisfy the life history requirements of the species (e.g., absence of foraging habitat; lack of reproductive areas, and lack of sheltering areas); presence of barriers to migration and dispersal; presence of predators or invasive species that inhibit survival or occupation (e.g., the presence of bullfrogs or invasive fishes); and lack of hibernacula, hibernation areas, or estivation areas onsite.
- *Absent* – Suitable habitat does not exist in the study area, the species is restricted to or known to be present only within a specific area outside of the study area, or focused or protocol-level surveys did not detect the species.

Unless otherwise noted, the likelihood of presence and environmental information presented in this section are summarized in Appendix 3.4A.

3.4.3 Environmental Setting

3.4.3.1 Regional Setting

The project site is in Land Resources Region C: the California Subtropical Fruit, Truck, and Specialty Crop Region (USDA-NRCS 2006) and in the Bay Flats subsection of the Central California Coast ecological subregion of California (Miles and Goudey 1997). This region is a nearly flat (less than approximately 10 feet above sea-level) delta and estuarine area in the south San Francisco Bay and was historically flooded during high tide before artificial barriers were built. The region is hot and subhumid: mean annual temperature is about 58° to 60° F and the mean freeze-free period is about 250 to 275 days. Mean annual precipitation is about 12 to 15 inches of rainfall. The predominant natural plant community on the inner edges of the subsection, away from the bay, is sedge meadow communities and emergent aquatic communities. The project vicinity has been altered by human activity, including levee building and agricultural activities.

3.4.3.2 Local Setting

The approximately 64.5-acre project site is comprised of one parcel (APN 015-31-054) located north of Highway 237 between Zanker Road and Coyote Creek in the City of San José, as shown on Figure 3.4-1R. The project site is located west of Coyote Creek and to the east and north of the LECEF power plant and the Pacific Gas and Electric (PG&E) Los Esteros substation. The project also includes the offsite extension of utilities and roadways onto the project site, primarily on property owned by the City of San José west of the site (APNs 15-31-028, -044, -050, - 061, -062, and -063).

The study area is shown on Figure 3.4-1R, and is defined as the project site, associated offsite linear facilities, and roadways that would be disturbed in order to implement the project, plus a 150-foot buffer of these areas. Four general biotic habitat distinctions describe the habitat areas identified within the study area: agricultural fields (short-term fallowed), annual grassland, developed, and Coyote Creek riparian corridor (City of San José 2017). These general biotic habitats are described in further detail in the following sections.

The main portion of the project site is comprised of agricultural fields with and a small wetland. The utility alignments are comprised of annual grassland with some developed roads.

While the project site does not include riparian habitat, it was present in the 150-foot buffer of the project study area. Riparian habitat in the study area is broken up into two habitat types: riparian woodland and riparian floodplain.

There are two aquatic resources onsite. A small wetland (approximately 0.066 acre) exists in the shape of a narrow triangular area near Ranch Drive in the southwestern corner of the main site. In addition, a depression exists along the proposed utility line corridors immediately west of the PG&E substation, and historical photography from available aerial imagery shows that this area has held ponded water at some points in the past (Figure 3.4-2R). This feature is potentially a wetland. Immediately adjacent to the eastern boundary of the project is the Coyote Creek riparian corridor; however, no work will be conducted within 100 feet of the toe of the Coyote Creek levee or near the small wetland.

Landcover, Vegetation, and Wildlife Habitats

Agricultural Fields

The project site is predominantly comprised of managed agricultural fields that are regularly disked and are currently fallow. The project site appears to have been disked annually or farmed, or both, for more than 20 years according to available aerial imagery (Google 2019). At the time of the 2016 and 2019 surveys, these fields were mostly comprised of barren exposed soils with scattered ruderal annual grassland species. Vegetation of the agricultural fields was dominated by typical grassland species such

as wild oat (*Avena* spp.) and Italian rye grass (*Lolium multiflorum*), and forb species including cheeseweed mallow (*Malva parviflora*), black mustard (*Brassica nigra*), and summer mustard (*Hirschfeldia incana*).

Other species observed in this habitat of the study area included Harding grass (*Phalaris aquatica*), poison hemlock (*Conium maculatum*), field bindweed (*Convolvulus arvensis*), bristly ox tongue (*Helminthotheca echioides*), prickly lettuce (*Lactuca serriola*), wild radish (*Raphanus raphanistrum*), and milk thistle (*Silybum marianum*). Along the northern margin of the site, which was less managed, a few woody plants occurred including coyote brush (*Baccharis pilularis*), box elder (*Acer negundo*), Northern California black walnut (*Juglans hindsii*), and blue elderberry (*Sambucus cerulea*). A linear low depression exists along the western edge of the site; however, except for a couple individuals of wetland species like curly dock (*Rumex crispus*), this feature is dominated by upland species like cheeseweed and wild radish. Grasses dominating this feature appear to be undifferentiated from the adjacent field to the east, and this feature has no real defined bed and bank.

Annual Grassland

Annual grassland areas were observed along much of the offsite infrastructure alignment areas of the proposed project (i.e., roadways,utility corridors, bike trail). Annual grasslands range from managed fields to a more mesic and intact grasslands and total approximately 55 offsite acres[3]. A former creek that has been filled and no longer supports a bed and bank runs north-south where the project's proposed offsite utility alignment is planned (City of San José 2017). A depression exists along the proposed utility line corridors immediately west of the PG&E substation, and historical photography from available aerial imagery shows that this area has held ponded water at some points in the past (Figure 3.4-2R). However, this feature appears to have been farmed for more than 20 years according to available aerial imagery and was dominated by upland species during the June 2019 site visit. Per project design measure BIO-5.2 (discussed in Section 3.4.5, Proposed Mitigation Measures to be Incorporated for the Project), an aquatic resources delineation will be completed prior to construction to further investigate this area.

One long thin man-made raised earthen berms exists within the annual grassland in the field east of Zanker Road and north of the existing bike path along the western edge of the proposed offsite utility alignments (Figure 3.4-1R). This berm had several black corrugated pipes installed within the berm. These may have been installed to promote habitat suitability of the property for burrowing owls (*Athene cunicularia*). This berm provides habitat for California ground squirrels (*Otospermophilus beecheyi*), which have colonized many of the berms. Burrowing owls were not observed during the site surveys, but signage along Nortech Parkway indicated that the annual grassland in the western portion of the proposed utility alignments was being managed for burrowing owl and that burrowing owls may be present.

Plants observed in this habitat and along the edges of this habitat include ruderal plants generally found in annual grasslands such as wild oats, black mustard, ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Italian thistle (*Carduus pycnocephalus*), barnyard barley (*Hordeum vulgare*), prickly lettuce (*Lactuca serriola*), common mallow (*Malva neglecta*), wild radish, Russian-thistle (*Salsola tragus*), prickly sow-thistle (*Sonchus asper*), and common chickweed (*Stellaria media*). Borders of this habitat included landscaped trees and other landscaping.

Developed

There are developed lands both on the project site and offsite in the utility alignment areas. Approximately 4 acres of currently developed area exists onsite and includes the following:

- A landscaped margin along the western side of the agricultural fields which is shared with the PG&E and LECEF properties (the margin to the west of project site)

[3] Acreage assumes 150 feet (75 feet on either side of centerline)

- A large gravel driveway that provides access from the two former residential units to Ranch Drive that have since been demolished.[4]

The areas of the project site where the residences previously existed support a mix of horticultural plant species and weedy species. Plants observed in these onsite developed areas include landscape plantings of jacaranda (*Jacaranda mimosifolia*), oleander (*Nerium oleander*), pepper trees (*Schinus* sp.), privet (*Ligustrum* sp.), and a row of various managed fruit trees and olives (*Olea europaea*). Weedy species around these onsite developed areas include many of the same species observed in the agricultural fields of the site as well as spurge (*Euphorbia* sp.), stinkwort (*Dittrichia graveolens*), willow herb (*Epilobium brachycarpum*), serrated lettuce, mallow, and Russian thistle. The landscaped margin of the site, which lies along the western side of the agricultural fields, supports pepper and sycamore trees (*Platanus* sp.), privet, and crimson bottlebrush (*Callistemon citrinus*) to name a few of the plantings.

Within the infrastructure alignment areas offsite, approximately 15 acres of developed land use areas exist, including existing public and private roadways and a bike path on Alviso-Milpitas Road that parallels Highway 237. No plants were observed within the existing public and private roadways and bike path in the offsite developed areas. Some of these species overhang the project site and some are likely offsite within the proposed utility infrastructure alignment areas.

Wetlands

A small wetland (approximately 0.066 acre) exists in the shape of a narrow triangular area near Ranch Drive in the southwestern corner of the main site (City of San José 2017). It is dominated by a dense stand of California blackberry, and there is a pump station next to it.

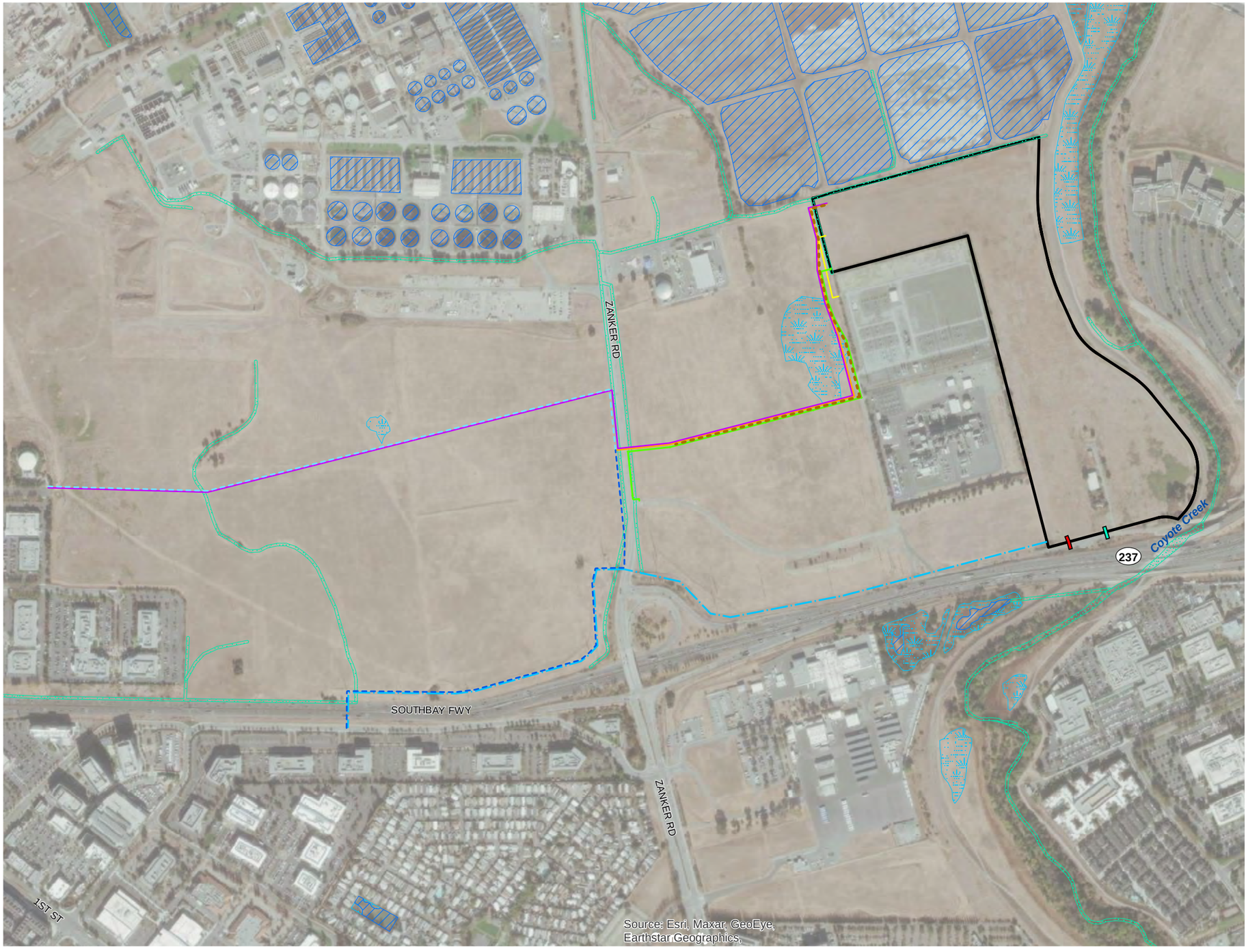
As described previously in the annual grassland section, a depression exists along the proposed utility line corridors immediately west of the PG&E substation, and historical photography from available aerial imagery shows that this area has held ponded water at some points in the past (Figure 3.4-2R). This feature is potentially a wetland. Per project design measure BIO-5.2 (discussed in Section 3.4.5, Proposed Mitigation Measures to be Incorporated for the Project), an aquatic resources delineation will be completed prior to construction to further investigate this area.

Offsite Riparian Corridor: Coyote Creek Riparian Woodland and Floodplain

Coyote Creek is separated from the project site by a levee topped with a gravel levee road. The riparian habitat of Coyote Creek is comprised of two habitat types: a riparian woodland and a mesic grassland floodplain that appears to be managed for fire fuel abatement. No work from the project will be conducted within 100 feet of the toe of the levee, which is the applicable setback pursuant to City's Riparian Corridor Policy.

The riparian woodland of Coyote Creek that runs along the project site's eastern boundary contains mature riparian tree species that provide a dominant habitat canopy. Tree species in the riparian woodland include box elder, California buckeye (*Aesculus californica*), cottonwood, valley oak (*Quercus lobata*), coast live oak (*Q. agrifolia*), willows (*Salix* spp.), and black elderberry (*S. canadensis*). Shrubs, forbs, and grasses in the understory of the riparian tree canopy included mugwort (*Artemisia vulgaris*), giant reed grass (*Arundo donax*), mulefat (*Baccharis salicifolia*), coyote brush, poison hemlock, teasel (*Dipsacus* sp.), broad-leaved peppergrass (*Lepidium latifolium*), California blackberry (*Rubus ursinus*), curly dock, and cattail (*Typha* sp.), to name a few of the observed species.

[4] There were 2 vacant residences and a storage shed/warehouse onsite, which were demolished in 2021 after a fire significantly affected the safety of one of the dwellings.



LEGEND

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine
- Project Site
- Proposed Storm Drain
- Proposed Gas Line #1
- Proposed Gas Line #2
- Proposed Sanitary Sewer
- Proposed Reclaimed Water
- Proposed Water Line Route #1
- Proposed Water Line Route #2
- Proposed Water Line Route #3
- Proposed Shared Water Line
- Proposed Electrical Supply Line

Source:
U.S. Fish and Wildlife Service, 2019

N

0 750 1,500

Approximate scale in feet

Figure 3.4-2R
National Wetlands
Inventory Mapping
San José Data Center
San José, California

JACOBS

\\DC1VS01\GISPROJ\L\LIGHTSPEED\SJDC\MAPS\REPORT\2021\FIG3_04-2R_BIOLOGY_NWI.MXD 8/10/2021 12:07:32 PM

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

Special-Status Species

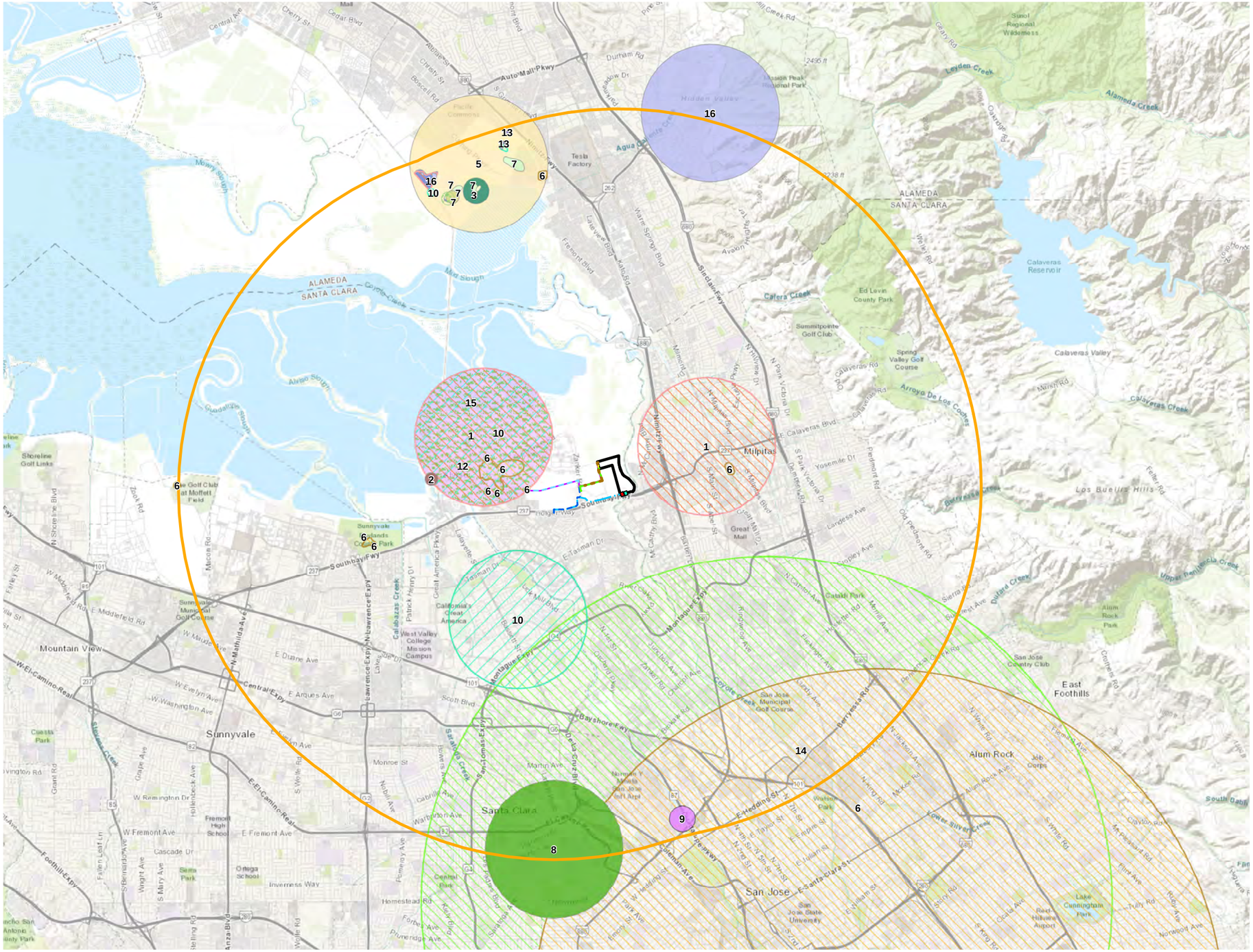
This section describes special-status species observed (present) during project reconnaissance-level field surveys and any species considered to be likely to occur, have potential to occur, or that are seasonally present. Special-status species that are unlikely to be found in the study area are not discussed in this section.

The CNDDB, USFWS, and CNPS database searches identified 47 special-status species within the vicinity of the project, as described in Section 3.4.2.2, Methodology (Appendix 3.4A). CNDDB records of plants, wildlife, and critical habitat are illustrated on Figures 3.4-3aR and 3.4-3bR. These database searches identified 20 special-status plant species, and 27 special-status wildlife species. Table 3.4-1 (Special-Status Plant Species and Special-Status Wildlife Species, respectively) only include those species that were identified as having some potential to occur in the study area. A full list of the species identified in the database reviews and their likelihood of presence is provided in Appendix 3.4A.

Special-Status Plants

Of the 20 special-status plant species that occur regionally within habitats that are broadly similar to those of the project site, 19 are considered absent and one (Congdon's tarplant [*Centromadia parryi ssp. congdonii*]) is considered to be unlikely to occur onsite or within the offsite infrastructure alignment areas. This is because they are not known to occur near the site, or they occur within habitats that are different from those of the site.

Congdon's tarplant plant is listed on the CNPS Inventory of Rare and Endangered Plants of California List 1B. It is found in valley and foothill grasslands on alkaline soils from sea level to 750 feet in elevation. This species is highly tolerant of disturbed habitats. The closest known occurrence is approximately 1.5 miles southwest of the site (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). Although potential habitat is present within ruderal grasslands of the site, site surveys were conducted in 2016 and 2017 within the blooming season for this species and it was not observed (Live Oak Associates 2017). Because it was not detected in 2017 site surveys, this plant species is considered to be unlikely to occur onsite or within the offsite infrastructure alignment areas.



LEGEND

- Proposed Storm Drain
- Proposed Gas Line #1
- Proposed Gas Line #2
- Proposed Sanitary Sewer
- Proposed Reclaimed Water
- Proposed Water Line Route #1
- Proposed Water Line Route #2
- Proposed Water Line Route #3
- Proposed Shared Water Line
- Proposed Electrical Supply Line
- San José Data Center
- 5 Mile Radius from Project

Plants

- 1 - alkali milk-vetch
- 2 - arcuate bush-mallow
- 3 - brittlescale
- 4 - California alkali grass
- 5 - California seablite
- 6 - Congdon's tarplant
- 7 - Contra Costa goldfields
- 8 - hairless popcornflower
- 9 - Hall's bush-mallow
- 10 - Hoover's button-celery
- 11 - lesser saltscale
- 12 - Point Reyes salty bird's-beak
- 13 - prostrate vernal pool navarretia
- 14 - robust spineflower
- 15 - saline clover
- 16 - San Joaquin spearscale

Note:
CNDDB version June 2019
ESRI Service Layer
Source:
The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area.

N

0 1.5 3

Approximate scale in miles

Figure 3.4-3aR
California Natural Diversity Database
Special Status Species (Plants) within 5 Miles of the Project Area
San José Data Center (SJC02)
San José, California

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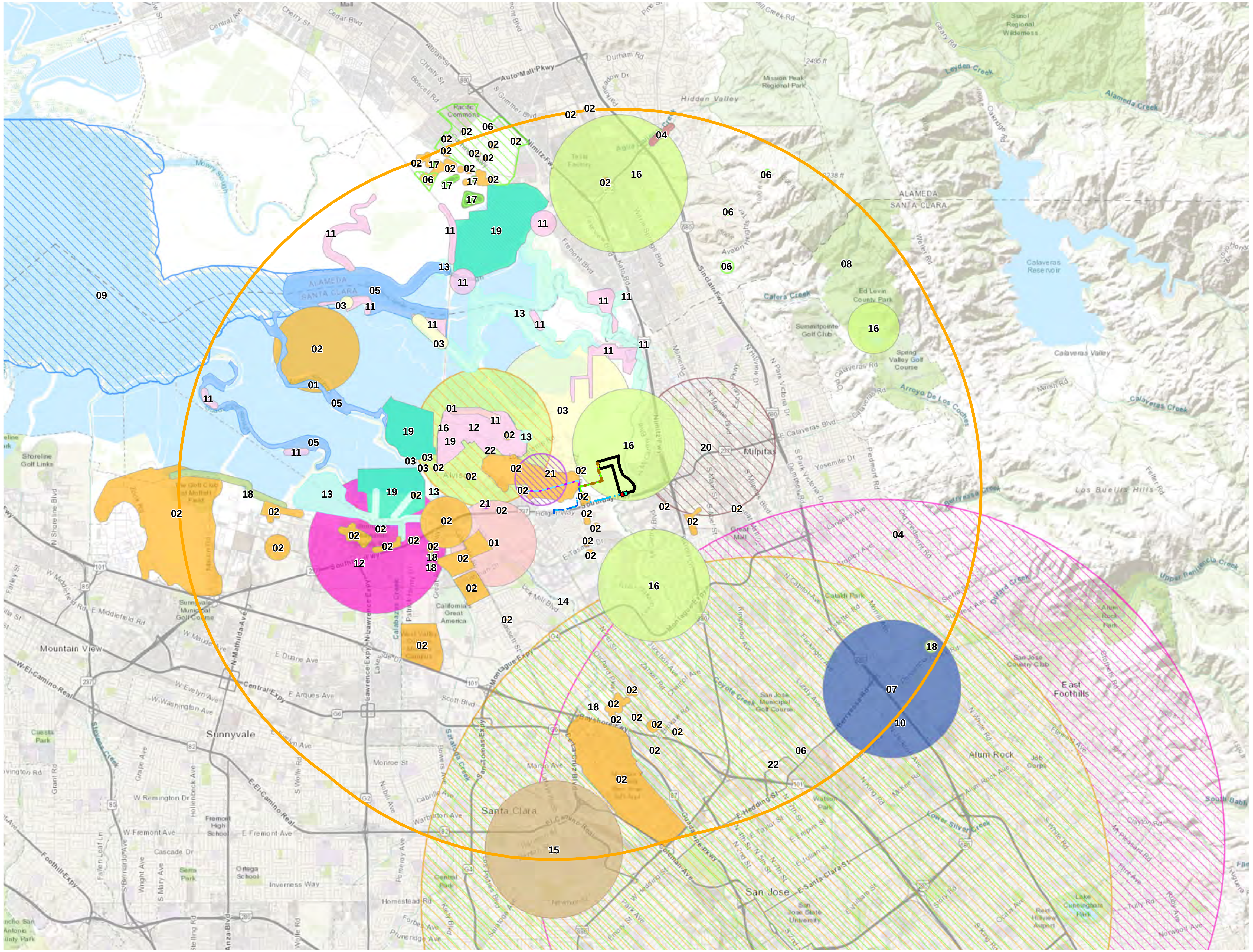
\\DC1VS01\GISPROJ\L\LIGHTSPEED\SJDC\MAPS\REPORT\2021\FIG3_04-3AR_BIOLOGY_CNDDB-PLANTS_5 MILES.MXD 8/10/2021 12:07:20 PM



LEGEND

- Proposed Storm Drain
- Proposed Gas Line #1
- Proposed Gas Line #2
- Proposed Sanitary Sewer
- Proposed Reclaimed Water
- Proposed Water Line Route #1
- Proposed Water Line Route #2
- Proposed Water Line Route #3
- Proposed Shared Water Line
- Proposed Electrical Supply Line
- San José Data Center
- 5 Mile Radius from Project

Animals

- 01 - Alameda song sparrow
- 02 - burrowing owl
- 03 - California black rail
- 04 - California red-legged frog
- 05 - California Ridgway's rail
- 06 - California tiger salamander
- 07 - foothill yellow-legged frog
- 08 - golden eagle
- 09 - longfin smelt
- 10 - northern California legless lizard
- 11 - salt-marsh harvest mouse
- 12 - salt-marsh wandering shrew
- 13 - saltmarsh common yellowthroat
- 15 - Swainson's hawk
- 16 - tricolored blackbird
- 17 - vernal pool tadpole shrimp
- 18 - western pond turtle
- 19 - western snowy plover
- 20 - western yellow-billed cuckoo
- 21 - white-tailed kite
- 22 - yellow rail

Note:
CNDDB version June 2019
ESRI Service Layer
Source:
The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area.

0 1.5 3
Approximate scale in miles
N

Figure 3.4-3bR
California Natural Diversity Database
Special Status Species (Animals) within 5 Miles of the Project Area
San José Data Center (SJC02)
San José, California

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\\DC1VS01\GISPROJ\L\LIGHTSPEED\SJDC\MAPS\REPORT\2021\FIG3_04-3BR_BIOLOGY_CNDDB-ANIMALS_5 MILES.MXD 8/10/2021 12:06:23 PM

Special-Status Animals

In total, 27 special-status animal species occur, or once occurred, within the study area. Of these, 14 species are expected to be absent or unlikely to occur on the project site or within the offsite infrastructure alignment areas due to a lack of suitable habitat. Of these, 13 special-status animal species may occur as foragers, transients, may be resident to the project site, or they may occur within areas adjacent to the site. These include steelhead (*Oncorhynchus mykiss*), American peregrine falcon (*Falco peregrinus anatum*), Alameda song sparrow (*Melospiza melodia pusillula*), yellow warbler (*Setophaga petechia*), northern harrier (*Circus hudsonius*), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), tricolored blackbird (*Agelaius tricolor*), burrowing owl (*Athene cunicularia*), western snowy plover (*Charadrius alexandrinus nivosus*), white-tailed kite (*Elanus leucurus*), ringtail cat (*Bassariscus astutus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). Several of these species may also roost or nest in trees or shrubs occurring on or adjacent to the site.

Table 3.4-1. Special-Status Wildlife Species

Scientific Name/ Common Name	Status[a]			Habitat	Potential for Occurrence
	Federal	State	CDFW		
Fish					
Oncorhynchus mykiss irideus/ steelhead, central California coast distinct population segment	T	-	-	Spawn in freshwater rivers or streams in the spring and spend the remainder of their life in the ocean	**Seasonally Present.** Rivers and creeks are absent from the main part of the site.
Birds					
Agelaius tricolor/Tricolored blackbird	-	T	SSC	Breeds near fresh water, primarily emergent wetlands, with tall thickets Forages in grassland and cropland habitats	**Potential to Occur.** Suitable tricolored blackbird habitat is absent from the main portion of the site; however, the riparian habitat along the Coyote Creek corridor supports suitable nesting habitat for the tricolored blackbird. The SCVHCP identifies the eastern edge corner of this site to be within 250 feet of potentially suitable tricolored blackbird nesting habitat. Condition 17 of the SCVHCP requires surveys for tricolored blackbirds, as potentially suitable habitat exists adjacent to (and within 250 feet of) the site within Coyote Creek.
Athene cunicularia/ burrowing owl	-	-	SSC	Open, dry annual or perennial grasslands with low-growing vegetation and on the margins of disturbed/developed habitats Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel	**Potential to occur.** The site is within the burrowing owl fee area for the SCVHCP, and burrowing owls are known to occur adjacent to the site as well as artificial burrows specifically designed for burrowing owls near the offsite utility alignments to the west of the site. The site currently supports California ground squirrel burrows and provides potential habitat for BUOW. Surveys for burrowing owl per the HCP protocol were conducted on the main portion of the site on June 20 and October 18, 2016, and the utility alignment was surveyed on October 18, 2016; BUOW were not observed onsite during the surveys.

Table 3.4-1. Special-Status Wildlife Species

Scientific Name/ Common Name	Status[a]			Habitat	Potential for Occurrence
	Federal	State	CDFW		
Charadrius alexandrinus nivosus/ western snowy plover	T	-	SSC	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting	**Potential to occur.** Breeding and foraging habitat is available along Coyote Creek levee.
Circus cyaneus/ Northern harrier	-	-	SSC	Coastal saltwater and freshwater marshes, nesting and foraging habitats in grasslands and agricultural fields; nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas	**Potential to occur.** Harriers may forage over the site and may nest on or adjacent to the site.
Elanus leucurus/ white-tailed kite	-	-	CFP	Rolling foothills and valley margins with scattered oaks, and river bottomlands or marshes next to deciduous woodland; open grasslands, meadows for foraging close to isolated, dense-topped trees for nesting and perching	**Potential to Occur.** Suitable breeding habitat exists onsite for this species, and foraging habitat is available in the agricultural field and annual grassland habitats onsite.
Falco peregrinus anatum/ American peregrine falcon	-	-	CFP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds, and human-made structures Nest consists of a scrape or a depression or ledge in an open site	**Potential to Occur.** Although nesting habitat is not present on the site, foraging habitat is present onsite. The nearest recorded observance of the American peregrine falcon is more than 3 miles from the site; however, the American peregrine falcon is known from the San José area. Therefore, this species could forage over the site from time to time.
Geothlypis trichas sinuosa/ Salt marsh common yellowthroat	-	-	SSC	Resident of the San Francisco Bay region, in freshwater and saltwater marshes; requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting	**Potential to occur.** This species is known to be in the area of the site, and may breed adjacent to the site in the Coyote Creek riparian corridor.
Melospiza melodia pusillula/ Alameda song sparrow	-	-	SSC	Resident of salt marshes bordering south arm of San Francisco Bay; inhabits *Salicornia* marshes Nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*	**Potential to Occur.** This species is known to be in the area of the site, and may breed adjacent to the site in the Coyote Creek riparian corridor.
Setophaga petechia/ yellow warbler	-	-	SSC	Migrants move through many habitats of Sierra and its foothills; breeds in riparian thickets of alder, willow, and cottonwoods	**Potential to Occur.** This species is known to be in the area of the site, and may breed adjacent to the site in the Coyote Creek riparian corridor.
Mammals					
Bassariscus astutus/ Ringtail cat	-	-	CFP	Occurs in heavily wooded habitats near water	**Potential to Occur.** Riparian habitat along Coyote Creek provides potentially suitable habitat for the ringtail adjacent to the site; however, it is likely that any ringtail would not stray far from these riparian areas and would be considered to be Unlikely to Occur to occur on the main portion of the site**.**

Table 3.4-1. Special-Status Wildlife Species

Scientific Name/ Common Name	Status[a]			Habitat	Potential for Occurrence
	Federal	State	CDFW		
Corynorhinus townsendii/ Townsend's big-eared bat	-	-	SSC	Primarily a cave-dwelling bat that may also roost in buildings Occurs in a variety of habitats of the state	**Potential to Occur.** Foraging habitat is present on the site; however, potential roosting habitat is absent from the site.
Neotoma fuscipes annectens/ San Francisco dusky-footed woodrat	-	-	SSC	Found in hardwood forests, oak riparian, and shrub habitats	**Potential to Occur.** Riparian habitat along Coyote Creek provides potentially suitable habitat for the dusky-footed woodrat.

Sources:
1) USFWS. 2018a. Species list query for the project location.

2) CNDDB. 2018. Queried for occurrences within 5 miles of the project location.

[a] Status designations are as follows:

Federal Designations:(E) Federally Endangered, (T) Federally Threatened, (D) Federally Delisted

State Designations:(E) State Endangered, (T) State Threatened, (D) State Delisted

CDFW Designations:(SSC) Species of Special Concern, (CFP) California Fully Protected

Fish

Steelhead, central California coast distinct population segment

Central California coast steelhead move through Coyote Creek during migration between estuarine and oceanic habitat downstream and spawning or rearing habitat upstream, although this species is not expected to spawn in the reach located adjacent to the study area.

Birds

American Peregrine Falcon

The American peregrine falcon was delisted from ESA and CESA but remains a CDFW Fully Protected species. The habitat of the American peregrine falcon includes many terrestrial biomes, which may include urban and developed areas. Most often, breeding peregrine falcons use habitats containing cliffs and almost always nest near water (Wheeler 2003; White et al. 2002). Peregrine falcons generally use open habitats for foraging but are also known to forage and occur in densely populated areas. Many artificial habitats (such as towers, bridges, and buildings) are also used by this species (White et al. 2002). Prey mainly consists of birds ranging from small passerines to mid-sized waterfowl, and juveniles primarily feed on large flying insects (Wheeler 2003).

There is one CNDDB occurrence of this species within the study area (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). This occurrence labelled as "sensitive" and is confined to the San José West USGS quad, 3.3 miles south of the project site. CNDDB occurrence details describe a nest box attached to a high-rise office building in San José that has provided habitat for successful nesting every year from 2006 to 2015. This species may forage for avian prey in and above the area. However, this species is not expected to nest in or near the study area due to the lack of suitable cliffs and structures for nesting.

Alameda Song Sparrow

The Alameda song sparrow is a CDFW Species of Special Concern. The Alameda song sparrow inhabits tidal salt marshes that have an appropriate configuration of vegetation, water, and exposed ground (Marshall 1948). Vegetation is required for nesting sites, perches, and concealment from predators. Height of vegetation may also be limiting for song sparrows, because tides may flood low-lying nests. Marshall (1948) noted that song sparrows were either absent or occurred at lower densities when cordgrass (*Spartina foliosa*) was less than 1.5 feet high, and that song sparrows were missing from areas of pickleweed (*Salicornia pacifica*) that were less than 1 foot high. Exposed ground for foraging is required for the species.

There are three CNDDB occurrences of this species within the study area (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). The closest occurrence of this species is located approximately 1.6 miles west/southwest of the project site, or approximately 0.2 mile southwest of the proposed offsite infrastructure alignment areas near Nortech Parkway, in restored salt marsh habitat dominated by pickleweed (*Salicornia* sp.) in Alviso Marsh. Because of the proximity of the project to salt marsh habitat, this species may nest in low shrubs in or near the study area.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a CDFW Species of Special Concern that is primarily a grassland species, but it is known to persist and occasionally thrive in some landscapes that are highly altered by human activity (Rosenberg and Haley 2004). Suitable habitat characteristics are burrows for roosting and nesting, relatively short vegetation with only sparse shrubs, and taller vegetation (Haug et al. 1993). Nest and roost burrows are most commonly dug by ground squirrels (*Spermophilus beecheyi*) (Trulio 1997), but burrowing owls may use other mammal burrows or structures such as culverts, piles of concrete rubble, and pipes (Ronan 2002). Most California populations are nonmigratory, and these habitat types serve for breeding, foraging, and overwintering.

Burrowing owls are known to occur adjacent to the site and could occur within artificial burrows specifically designed for burrowing owls near the offsite utility alignments to the west of the site. The site and offsite alignment areas currently support California ground squirrel burrows and provides potential habitat for burrowing owls. Surveys for burrowing owl per the protocols included in the SCVHCP were conducted on the main portion of the site on June 20 and October 18, 2016, and the utility alignments were surveyed on October 18, 2016 (Live Oak Associates 2017). Burrowing owls were not observed during the surveys. However, as the site is within the burrowing owl fee zone for the SCVHCP, the project will be required to conduct pre-construction surveys in accordance with Condition 15. Measures to confirm compliance with this condition are included herein. Should site grading occur during the nesting season for this species (February 1 through August 31), nests and nestlings that may be present would likely be destroyed. Overwintering burrowing owls may also be buried in their roost burrows outside of the nesting season (September 1 through January 31). Project design measures will verify that burrowing owls will not be harmed by construction activities. Completion of the following measures, including the payment of SCVHCP fees, will reduce the potential impacts to burrowing owls to a less than significant level.

Yellow Warbler

The yellow warbler is a CDFW Species of Special Concern. Migrants of this species move through many habitats of Sierra and its foothills. This species breeds in riparian thickets of alder, willow, and cottonwoods.

While there are no CNDDB records within 5 miles of the project site, there are four eBird occurrences of this species within the Coyote Creek riparian corridor east of the project site from as recently as 2018, and several other eBird occurrences within 5 miles of the project site (CDFW 2019a; eBird 2019). This

species is known to be in the vicinity of the study area and may breed adjacent study area in the Coyote Creek riparian corridor.

Northern Harrier

The northern harrier is a CDFW Species of Special Concern. Harriers breed and forage in a variety of open habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered perches, such as shrubs or fence posts. These habitats may include freshwater marshes; brackish and saltwater marshes; wet meadows; weedy borders of lakes, rivers and streams; grasslands; weed fields; pastures; and some croplands. Harriers nest on the ground, mostly within patches of dense, often tall, vegetation in undisturbed areas (MacWhirter and Bildstein 1996).

While there are no CNDDB records within 5 miles of the project site, and the nearest CNDDB record is located in salt marsh habitat approximately 5.9 miles west/northwest of the project site, this species is known to occur near the study area, and there are several eBird occurrences within 1 mile of this area (CDFW 2019a; eBird 2019). Northern harriers may forage and may nest on the ground in or near the study area.

Salt Marsh Common Yellowthroat

The salt marsh common yellowthroat is a CDFW Species of Special Concern. Breeding habitat includes woody swamps, brackish marsh, and freshwater marsh (Foster 1977). This species typically occupies the ecotone between moist and upland habitats and can also use small and relatively isolated patches of habitat, including swales and seeps where groundwater is close to the surface; however, this species also occasionally nests in drier environments (Hobson et al. 1986). In brackish and saline tidal marsh habitat, abundance was positively associated with a high percent cover of rushes (*Scirpus* spp. and *Juncus* spp.) and peppergrass (*Lepidium latifolium*), and with a height of the highest herbaceous plant over 1 foot. They build open-cup nests that are well concealed and are typically located near the ground in grasses and herbaceous vegetation, such as poison hemlock *(Conium maculatum*), cattails (*Typha* spp.), tules (*Schoenoplectus* spp.), and some shrubs (e.g., coyote brush [*Baccharis pilularis*]).

There are four CNDDB records for this species within 5 miles of the project site, including one occurrence in the Coyote Creek riparian corridor immediately east of the project site from 1998 (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). This species may forage and breed in or near the study area.

Tricolored Blackbird

Tricolored blackbird was recently (March 2019) listed as a Threatened species under the California Endangered Species Act (CDFW 2019b). This colonial bird species breeds near fresh water, primarily emergent wetlands, with tall thickets. It especially prefers emergent vegetation and blackberry bushes for nesting habitat. It forages in grassland and cropland habitats.

There are five CNDDB records for this species within 5 miles of the project site, including one occurrence overlapping the project area from 1995 that describes tricolored blackbird nesting in poison hemlock and coyote brush (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). The SCVHCP identifies the eastern edge corner of this site to be within 250 feet of potentially suitable tricolored blackbird nesting habitat (County of Santa Clara et al. 2012). Suitable tricolored blackbird habitat is absent from the site; however, the riparian habitat along the Coyote Creek corridor supports suitable nesting habitat for tricolored blackbird. This species may forage and breed in or near the study area.

Western Snowy Plover

The western snowy plover is listed as Threatened under ESA and is also an SSC. Along the western coast of the United States, the nesting season of the western snowy plover extends from early March through late September. The earliest nests on the California coast occur during the first week of March in

some years, and by the third week of March in most years (Page et al. 1995). Peak initiation of nesting is from mid-April to mid-June (Powell et al. 1997). Breeding generally occurs above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Less common nesting habitat includes bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars. In winter, western snowy plovers are found on nesting beaches, man-made salt ponds, and on estuarine sand and mud flats.

There are two CNDDB records within 5 miles of the project site, including one occurrence located 1.1 miles west/northwest of the project area (0.5 mile north of the proposed offsite utility alignment areas near Nortech Parkway) (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). This occurrence describes a continuous record of western snowy plover breeding in New Chicago Marsh and the salt evaporator ponds on either side of Alviso Slough from 1971 to 2009. Breeding and foraging habitat is available along Coyote Creek levee. This species may breed and forage near the study area.

White-Tailed Kite

The white-tailed kite (*Elanus leucurus*) is a CDFW Fully Protected species. Kites inhabit open lowland valleys and low, rolling foothills, but are also known to occur in urban areas. This species forages in grasslands, marshes, riparian edges, and cultivated fields where prey species (mainly small mammals) are relatively abundant (Kaufman 1996). Kites typically nest on the tops of trees close to good foraging locations.

There are two CNDDB records within 5 miles of the project site (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). The closest occurrence is located approximately 0.5 mile west of the project site and overlaps the locations of the proposed offsite utility alignment areas west of the project site. This occurrence describes white-tailed kite nesting in a eucalyptus tree (*Eucalyptus* sp.) in 1971. There is suitable habitat for the species in the vicinity of the study area, particularly around the marshes north of the project site.

Other Migratory Birds and Nesting Raptors

Non-listed migratory bird species or raptors may establish nests in suitable habitat in or near the study area. The nesting season for migratory birds and raptors generally occurs between February 15 and August 31. One potentially active raptor nest was observed in the study area during the June 2019 survey. This large platform nest was located on the top of the shorter of two adjacent electrical transmission towers, in the northwestern corner of the project area (37.42966, -121.93542). There is potential for passerine and raptors to nest in or near the study area.

Mammals

Ringtail cat

Ringtail cat occurs in a wide variety of habitats near permanent fresh water (CDFW-CIWTG 2005). This species is not tracked in the CNDDB (CDFW 2019a). There is suitable habitat for the species near the study area, particularly around the Coyote Creek riparian corridor.

Townsend’s big-eared bat

Townsend's big-eared bat is found in all habitats except for subalpine and alpine habitats and may be found at any season throughout its range. It is most abundant in mesic habitats and requires caves, mines, tunnels, buildings, or other human-made structures for roosting. This species may use separate sites for night, day, hibernation, or maternity roosts. This species is extremely sensitive to disturbance of roosting sites (Zeiner et al. 1990).

The closest CNDDB record of this species is located approximately 5.1 miles south of the project site (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). This occurrence describes several museum specimens collected in the early to mid-20th century; the collection location noted for these specimens is described as "San José" and, therefore, the location of this occurrence is noted in the CNDDB as being approximate. No evidence of bats was observed during reconnaissance surveys, and it is highly unlikely that the site supports roosting habitat for bats; however, individual Townsend's big-eared bats may forage in the study area from time to time.

San Francisco dusky-footed woodrat

The San Francisco dusky-footed woodrat is found in in hardwood forests, oak riparian, and shrub habitats. This species is known to occur in the Coyote Creek corridor; however, no woodrat nests were detected during a focused survey in July 2016. For the reasons described previously, these species are determined to be absent in the study area.

The closest CNDDB occurrence of this species is located approximately 7.3 miles northeast of the project site, near the Calaveras Reservoir Dam (CDFW 2019a; Figures 3.4-3aR and 3.4-3bR). This occurrence describes 28 individuals encountered between 2011 and 2017. There is suitable habitat for the species in study area, particularly around the Coyote Creek riparian corridor.

Nitrogen Deposition

Air emissions from the natural gas generators and administrative diesel generators include, but are not limited to, nitrogen oxides (NOx) from both natural gas and diesel combustion and ammonia (NH_3) from selective catalytic reduction control devices on the diesel generators only. Nitrogen oxide gases (NO and NO_2) convert to nitrate particulates in a form that is suitable for uptake by most plants and could promote plant growth and primary productivity. Coastal salt marshes are a common natural habitat in the vicinity of the project where nitrogen deposition may occur. The critical load for atmospheric nitrogen deposition into coastal wetlands is difficult to establish, because wetlands subject to tidal exchange have open nutrient cycles. In addition, nitrogen loading in wetlands is often affected by sources other than atmospheric deposition (Morris 1991). Various studies that have examined nitrogen loading in intertidal salt marsh wetlands have found critical loads to range from between 63 and 400 kilogram per hectare per year (Caffrey et al. 2007; Wigand et al. 2003). The wet and dry nitrogen deposition resulting directly from depositional nitrogen emissions that would be generated from the project were evaluated using the air dispersion model AERMOD (version 21112). AERMOD is considered a conservative model for this analysis, as it is a steady-state Gaussian plume dispersion model and does not calculate complex chemical transformations and equilibria associated with nitrogen deposition.

Several additional conservative assumptions were used in the modeling with regard to nitrogen formation and deposition:

- 100 percent conversion of NOx and NH_3 into atmospherically derived nitrogen within the generator stacks was assumed, where applicable, rather than allowing for the conversion of NOx and NH_3 to occur over distance and time within the atmosphere, which would be more realistic.
- Depositional rates and parameters were based upon nitric acid (HNO_3) which, of all the depositing species, has the highest affinity for impacts to soils and vegetation and tendency to stick to what it is deposited on.
- Maximum settling velocities were selected to produce conservative deposition rates.
- Maximum potential emissions for the project were assumed to occur each year.

Emissions of depositional nitrogen were conservatively calculated as a complete conversion of in-stack NO_X from each natural gas generator and NOx and NH_3 from each administrative diesel generator. This was done by multiplying the nitrogen mass fraction of each of the pollutants by the respective average annual emissions.

The dry deposition algorithms in AERMOD include land use characteristics and some dry gas deposition resistance terms based on five seasonal categories and nine land use categories. The seasonal categories for each month of modeling are as follows:

- Midsummer: April, May, June, and July
- Autumn: August, September, and October
- Late Autumn/Winter without snow: November, December, and January
- Transitional Spring: February and March

Land use categories are used within AERMOD to calculate dry deposition of the emitted nitrogen compounds. For example, in areas of lush vegetation, the gaseous nitrogen compounds would have a higher uptake and, therefore, dry deposition would be higher at these areas than in bodies of water or urban areas with fewer trees. A determination for land use categories used in the analysis was conducted using satellite aerial imagery for which each 10-degree increment within a 3-kilometer radius surrounding the project was defined as either grassy suburban area or unforested wetland.

AERMOD also requires the input of wet and dry depositional parameters based on the nitrogen-containing species being emitted. For this analysis, it was conservatively assumed that all nitrogen emitted was in the form of HNO_3, as nitric acid is the most depositionally aggressive species. Based on the above modeling approach, the maximum modeled annual deposition of five individually modeled years (2013 to 2017) was 1.16 kilograms per hectare per year, which occurs on the southern fence line of the project site. The nitrogen deposition impacts drop off to less than 1 kilogram per hectare per year within 40 meters of the project fence line. These nitrogen deposition impacts are based on each natural gas generator operating up to 509 hours per year for load shedding, demand response and behind the meter resource adequacy (RA) ancillary services, and each administrative diesel generator operating up to 42 hours per year for maintenance and testing. The project nitrogen deposition impacts are not expected to significantly contribute to nitrogen loading on coastal salt marshes because of several factors, including the high level of NOx emission controls applied to both the natural gas and administrative generators; the fact that depositional nitrogen formation requires time for the chemical reaction to occur; and the predominate wind patterns in the project vicinity (northwest to southeast). These factors, among other factors, will result in a majority of the potential air quality impacts occurring away from the project site where time and distance will reduce ground-level concentrations.

SJC's already insignificant nitrogen deposition impacts will be further reduced through the payment of the SCVHCP nitrogen deposition impact fees. Therefore, given the emission controls incorporated into the project design and through payment of the applicable SCVHCP fee, no mitigation measures are required.

3.4.4 Potential Impacts

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

Less than Significant with Mitigation Incorporated.

Special-status animal species may be present in the study area and are protected by existing federal, state, and local laws, policies, and regulations as described in Section 3.4.1.1.

Congdon's tarplant was the only special-status plant with potential to occur in the study area, and this species was not detected in 2016 and 2017 surveys. Therefore this species is unlikely to occur in the onsite or offsite project area, and is not expected to be impacted. In total, 13 special-status animal species may occur as foragers or transients, may be resident to the site, or may occur within areas adjacent to the site. These include steelhead, American peregrine falcon, Alameda song sparrow, yellow warbler, northern harrier, saltmarsh common yellowthroat, tricolored blackbird, burrowing owl, western snowy plover, white-tailed kite, ringtail cat, Townsend's big-eared bat, and San Francisco

dusky-footed woodrat. With incorporation of BIO-1, BIO-2, BIO-2.1, BIO-2.2, BIO-2.3, BIO-2.4, and BIO-5.1, impacts on special-status birds, migratory birds, and raptors would be less than significant. As detailed more fully in the relevant design measures, surveys would be conducted for nesting birds, and those activities that could disturb the birds or cause nest abandonment would be avoided.

b) Would the project 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact.

Riparian habitat occurs along Coyote Creek, which is located adjacent to the eastern boundary. A 100-foot buffer from the toe of the levee is incorporated within the design; therefore, the project would be required to comply with the riparian setback requirements of the City of San José and the SCVHCP. Because no work would take place within the riparian corridor associated with Coyote Creek, development of the site would not constitute a significant effect on sensitive and protected habitat communities. Project design measures BIO-3.1, BIO-3.2, BIO-3.3, BIO-3.4, BIO-3.5, and BIO-5.2, along with compliance with the applicable provisions of the SCVHCP, will further verify that impacts remain at a less than significant level.

c) Would the project have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant with Mitigation Incorporated.

Wetland habitat occurs in the small triangular wetland near Ranch Road in the southwestern corner of the agricultural field (approximately 0.066 acre). As described in the annual grassland section, a potential wetland depression also exists along the proposed offsite utility alignment areas immediately west of the PG&E substation (Figure 3.4-2R). BIO-5.2 requires an aquatic resources delineation covering the project site to be conducted.

Development of the site would constitute a significant effect on wetlands if those wetlands would be impacted by project activities. If wetlands or other areas jurisdictional under Section 404 of the Clean Water Act will be impacted, the project would be required to apply for and obtain all necessary permits from USACE and RWQCB. Work will not be allowed to occur within jurisdictional features (if any) until all of the necessary permits have been obtained. Mitigation measures BIO-3.1, BIO-3.2, BIO-3.3, BIO-3.4, BIO-3.5, and BIO-5.2, and compensation consistent with the SCVHCP, would be imposed on the project to reduce impacts to a less than significant level with project design measures incorporated.

d) Would the project 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.

Buildout of the site and the offsite installation of utilities and other improvements and infrastructure would not substantially interfere with or otherwise constrain native wildlife movement, as the only corridor is the Coyote Creek riparian corridor at the eastern edge of the project site, and there will be no impacts to this corridor (as explained above). Animals currently using Coyote Creek as a corridor are expected to continue to use it at buildout of the project, especially since the existing levee on the western side of the creek would not be affected. Implementation of project design measures BIO-3.1 through BIO-3.5 will further reduce the already less than significant interference on the movement of native wildlife.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact

The City of San José has a Tree Ordinance (Chapter 13.32 of the Municipal Code), which regulates the removal of trees. An "ordinance-size tree" is defined as any native or non-native tree with a circumference of 56 inches (diameter of 18 inches) at 24 inches above the natural grade of slope. For multi-trunk trees, the circumference is measured as the sum of the circumferences of all trunks at 24 inches above the natural grade of slope. The ordinance covers both native and non-native species. A tree removal permit is required from the City prior to the removal of any trees covered under the ordinance. Prior to the issuance of a removal permit, the City requires that a formal tree survey be conducted which indicates the number, species, trunk circumference and location of all trees which will be removed or impacted by the project. The proposed project includes project design measure BIO-4.1, which is consistent with the plans and policies of the City of San José General Plan and Municipal Code.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less Than Significant Impact.

The study area is within the area covered by the SCVHCP, and the project qualifies as a covered activity. The proposed project includes project design measures consistent with the plans and policies of CDFW, USACE, RWQCB, the SCVHCP, the General Plan, the Alviso Master Plan, the City of San José Riparian Corridor Policy and Bird-Safe Design, and the City of San José's General Plan and Municipal Code. For these reasons, the project would not conflict with any local policies or ordinances protecting biological resources, such as the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.4.5 Proposed Measures to be Incorporated for the Project

The following sections describe significance criteria for impacts related to biological resources derived from Appendix G of the CEQA Guidelines, assess potential project-related construction and operational impacts on biological resources, and provide feasible measures that the project will be required to implement to reduce impacts to less than significant levels where necessary. The following measures will be implemented and are consistent with those included in the City of San José Draft Environmental Impact Report, 237 Industrial Center Project (City of San José 2017).

3.4.5.1 Migratory Birds and Other Protected Bird Species

To verify that any active nests will not be disturbed and that individual birds would not be harmed by construction activities, the following project design measures shall be implemented by the project to reduce impacts to a less than significant level. In addition, although unlikely to occur on the site itself, the SCVHCP identifies the project site and the offsite utility alignment areas to be within 250 feet of potentially suitable tricolored blackbird nesting habitat, thus requiring pre-construction surveys in accordance with the Condition 17 of the SCVHCP.

- BIO-1.1: If initial site disturbance activities, including tree, shrub, or vegetation removal, are to occur during the breeding season February 1st to August 31st inclusive, a qualified biologist shall conduct pre-construction surveys for nesting migratory birds onsite, within 250 feet (for raptors) of the site, and within utility corridors, where accessible. The survey shall occur within 7 days of the onset of ground disturbance if disturbances are to commence between February 1st and June 30th and within 30 days prior to the onset of ground disturbance between July 1st and August 31st. If a nesting migratory bird were to be detected, an appropriate construction-free buffer shall be established in consultation with the California Department of Fish and Wildlife (CDFW). The actual size of the buffer,

which shall be determined by the project biologist, would depend on species, topography, and type of activity that would occur in the vicinity of the nest. The project buffer would be monitored periodically by the project biologist to verify compliance. After the nest is completed, as determined by the biologist, the buffer would no longer be required.

- BIO-1.2: The SCVHCP identifies the project site to be within 250 feet of potentially suitable tricolored blackbird nesting habitat occurring along Coyote Creek. The project applicant shall conduct surveys for tricolored blackbirds within 250 feet of this habitat, where visual access is possible, prior to start of construction following protocols in Condition 17 in Chapter 6 of the SCVHCP. Such protocols include the following:
  - Prior to any ground disturbance, a qualified biologist shall complete a background assessment to determine if there has been nesting at the site or near the site in the past 5 years. This includes checking the CNDDB, contacting local experts, and looking for evidence of historical nesting (i.e., old nests).
  - If nesting in the past 5 years is not evident, the qualified biologist shall conduct a preconstruction survey in areas identified in the habitat survey as supporting potential tricolored blackbird nesting habitat. Surveys shall be made at the appropriate times of year when nesting use is expected to occur and shall document the presence or absence of nesting colonies of tricolored blackbird. Surveys shall conclude no more than 2 calendar days prior to construction, per Condition 17 of Chapter 6 in the SCVHCP.
  - Should a nesting colony of tricolored blackbirds be located, a 250-foot construction-free buffer shall be established from the edge of all hydric vegetation associated with the nest site and the buffer shall be avoided, and the CDFW and USFWS shall be notified immediately.
  - If construction occurs in the project site during the nesting season and when the 250-foot buffer is in place around active nesting habitat, a qualified biologist shall conduct periodic monitoring of the site to confirm that the 250-foot buffer is enforced. The biologist shall have the authority to increase the buffer size if needed based on tricolored blackbird behavior at the active nesting area.
  - If active tricolored blackbird nesting occurs within 250 feet of the project site and offsite utility alignment areas and construction occurs during the active nesting period resulting in the need for a buffer, the qualified biologist shall conduct training for construction personnel in avoidance procedures, buffer zones, and safety protocols to verify no impacts to the nest.

3.4.5.2 Western Burrowing Owls

The following project design measures will confirm that burrowing owls will not be harmed by construction activities. The SCVHCP provides applicable measures to work at locations where burrowing owl may occur, including survey methodologies, and includes protocols if burrowing owls need to be excluded or if unoccupied burrows need to be collapsed. Completion of the following measures, including the payment of SCVHCP fees, will reduce the potential impacts to burrowing owls to a less than significant level.

- BIO-2.1: To mitigate impacts to occupied burrowing owl habitat, the project applicant shall pay the applicable burrowing owl fee as specified in the SCVHCP for each acre of occupied burrowing owl nesting habitat impacted as a result of project buildout. Fees shall also be required from the loss of foraging habitat on the annual grassland offsite (approximately 64.5 acres; Zone A fees).
- BIO-2.2: The project applicant shall conduct preconstruction surveys to ascertain whether burrowing owls occupy burrows on the site and along the utility alignments offsite prior to construction. The preconstruction surveys shall be performed by a qualified biologist and shall consist of a minimum of two surveys, with the first survey no more than 14 days prior to initial construction activities (i.e. vegetation removal, grading, excavation, etc.) and the second survey conducted no more than 2 days prior to initial construction activities. If no burrowing owls or fresh sign of burrowing owls are observed during preconstruction surveys, construction may continue. However, if a burrowing owl is

observed during these surveys, occupied burrows shall be identified by the monitoring biologist and a buffer shall be established, as follows:

  - If an active nest is found, a qualified biologist shall establish a 250-foot non-disturbance buffer around all nest sites. If the biologist determines that the nest is vacant, the non-disturbance buffer zone may be removed, in accordance with measures described in the SCVHCP. The biologist shall supervise hand excavation of the burrow to prevent reoccupation only after receiving approval from the wildlife agencies (CDFW and USFWS) in accordance with Chapter 6, Condition 15 of the SCVHCP.
  - For permission to encroach within 250 feet of such burrows during the nesting season (February 1st through August 31st), an Avoidance, Minimization, and Monitoring Plan shall be prepared and approved by the City and the wildlife agencies prior to such encroachment in accordance with Chapter 6 of the SCVHCP.

- BIO-2.3: Should a burrowing owl be located during the non-breeding season (September through January), a 250-foot buffer shall be established, and construction activities shall not be allowed within the 250-foot buffer of the active burrow(s) used by any burrowing owl unless the following avoidance measures are adhered to:
  - A qualified biologist shall monitor the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
  - The same qualified biologist shall monitor the owls during construction. If the biologist determines there is a change in owl nesting and foraging behavior as a result of construction activities, these activities shall cease within the 250-foot buffer.
  - If the owls are gone from the burrows for at least 1 week, the project applicant may request approval from the habitat agency to excavate all usable burrows within the construction area to prevent owls from reoccupying the site. After all usable burrows are excavated, the buffer zone shall be removed, and construction may continue.
- BIO-2.4: In the event the voluntary relocation of site burrowing owls does not occur (defined as owls having vacated the site for 10 or more consecutive days), the project applicant can request permission to engage in passive relocation during the non-breeding season through the standard SCVHCP application process (Section 6.8 of the SCVHCP). If passive relocation is granted, additional measures may be required by the Habitat Agency.
  If the owls voluntarily vacate the site for 10 or more consecutive days, as documented by a qualified biologist, the project applicant could seek permission from the Santa Clara Valley Habitat Agency to have the qualified biologist take measures to collapse vacated and other suitable burrows to confirm that owls do not recolonize the site, in accordance with the SCVHCP.

3.4.5.3 Riparian and Wetland Habitats

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

- BIO-3.1: Prior to the start of any grading or other soil disturbing activities, the project applicant shall be required to prepare a Stormwater Pollution Prevention Plan consistent with the City's National Pollutant Discharge Elimination System C3 provisions.
- BIO-3.2: A qualified biological monitor shall visit the project site daily during utility line construction in the vicinity of the wetland to verify that BIO-3.1 through -3.5 are being fully implemented and are effective.
- BIO-3.3: Removal of wetland vegetation and/or trees for the installation of the utility line shall be limited to the minimum extent required.

- BIO-3.4: The project applicant shall verify that all seed mixtures used for revegetation of the impacted wetland area shall be locally native or sterile nonnative species only. No invasive non-native plant species shall be used for revegetation.
- BIO-3.5: The project applicant shall comply with all applicable laws and regulations regarding requirements of the CDFW, U.S. Army Corps of Engineers (USACE), and RWQCB for aspects of the project, if any, which fall within those agencies' respective purview, including obtaining any permits required for the construction of the utility lines in the offsite infrastructure alignment areas, as well as compliance with any additional conditions attached to any required permits and monitoring requirements (if any).

3.4.5.4 Trees

The following project design measure shall be implemented to reduce impacts to trees (that may be retained) from project construction to a less than significant level. All project design measures for impacts to trees that may be retained are subject to agreement with the Director of the Department of Planning, Building and Code Enforcement in accordance with the provisions of the City's Tree Preservation Ordinance.

- BIO-4.1: The project applicant, in consultation with a certified arborist or biologist, shall submit a Tree Protection Plan (TPP) to the Supervising Environmental Planner of the Department of Planning, Building, and Code Enforcement for trees to be preserved. The TPP shall include, but is not limited to, the following:
  - Number of trees and location of trees to be protected
  - Final landscaping proposal
  - Tree Protection Zone (TPZ)
  - Size and location of TPZ
  - Specific recommendation and suggestions or recommendation for each TPZ if applicable
  - Maintenance methodology for tree protection zones during the entire demolition and construction period
  - Irrigated schedule
  - Pruning schedule for preserved trees, if applicable
  - Herbicides and other products recommended to be used on preserved trees

3.4.5.5 General Measures

The following general measure shall be implemented:

- BIO-5.1: A worker environmental awareness program biological resources module will be conducted for onsite construction personnel prior to the start of construction activities. The module will explain the Applicant Proposed Measure (APM) and any other measures developed to prevent impacts on special-status species, including marsh species (salt marsh harvest mouse and rails) and nesting birds. The module will also include a description of special-status species and their habitat needs, as well as an explanation of the status of these species and their protection under ESA, CESA, and other statutes. A brochure will be provided with color photos of sensitive species, as well as a discussion of any permit measures. A copy of the program and brochure will be provided to California Public Utilities Commission at least 30 days prior to the start of construction for project files. This APM also includes the following measures:
  - Environmental Inspector: A qualified Environmental Inspector will verify implementation and compliance with all APMs. The Environmental Inspector will have the authority to stop work or determine alternative work practices where safe to do so, as appropriate, if construction activities are likely to affect sensitive biological resources.

  - Litter and Trash Management: Food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited into closed trash containers. Trash containers will be removed from the project work areas at the end of each working day unless located in an existing substation, potential staging area, or the switching station site.
  - Parking: Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas, or work areas as identified in this document.
  - Wetland and Waters Avoidance: Wetlands and waters as identified in the Aquatic Resources Delineation Report must be avoided during all work activities.
  - Pets and Firearms: No pets or firearms will be permitted at the project site.
- BIO-5.2: An aquatic resources delineation covering the entire project area will be conducted. All features that are determined to be jurisdictional under the resource agencies will either be avoided, or the relevant permits will be obtained for project impacts. Work will not occur within these jurisdictional features until the relevant permits have been obtained.

3.4.6 References

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3.8 Greenhouse Gas Emissions

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

Environmental checklist established in Appendix G of the *2019 California Environmental Quality Act (CEQA) Statute & Guidelines* (AEP 2019).

3.8.1 Setting

The San José Data Center (SJC) will be located within the City of San José on an approximately 64.5-acre site and will consist of two data center buildings totaling over approximately 396,914 square feet of space. The project will include 224 0.45-megawatt (MW) natural gas-fired generators to provide electrical power to support the electrical load of the data center buildings during utility outages or certain onsite electrical equipment interruptions or failures. Additionally, the use of the natural gas generators will enable the SJC to provide grid support through load shedding, demand response, and behind-the-meter Resource Adequacy (RA) ancillary services. In addition to these generators, the project will include two administrative Tier IV diesel-powered generators, rated at 1.25 MW and 0.5 MW, to support administrative functions during an interruption in the normal delivery of electrical power from the utility.

The project site has been used historically for farming since the early 1920s but is not currently in agricultural use and no dwellings or structures exist onsite[1]. To the north of the project site are the San José/Santa Clara Regional Wastewater Treatment Plant sludge drying beds, to the south is Highway 237, to the west is the Los Esteros Critical Energy Facility (LECEF), a PG&E substation, and to the east is Coyote Creek. The project is anticipated to begin construction in the 4th quarter of 2022, with operations beginning in the 1st quarter of 2024.

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

3.8.1.1 Regulatory Background

Federal Laws and Regulations

In April 2007, the U.S. Supreme Court held that GHG emissions are pollutants within the meaning of the Clean Air Act (CAA). In reaching its decision, the Supreme Court also acknowledged that climate change results, in part, from anthropogenic causes (Massachusetts et al. v. Environmental Protection Agency 549

[1] There were 2 vacant residences and a storage shed/warehouse onsite, which were demolished in 2021 after a fire significantly affected the safety of one of the dwellings.

U.S. 497, 2007). The Supreme Court's ruling paved the way for the regulation of GHG emissions by the U.S. Environmental Protection Agency (EPA) under the CAA.

In response to this Supreme Court decision, on December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- Endangerment Finding: That the current and projected concentrations of GHGs in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: That the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

In 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule (MRR), which requires reporting GHG emissions from large sources and suppliers in the U.S. The MRR requires suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside of the light-duty sector, and facilities that emit more than 25,000 metric tons of carbon dioxide equivalent (CO_2e) per year to submit annual reports to the EPA. The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change.

With the 2010 GHG Tailoring Rule, the EPA mandated that Prevention of Significant Deterioration (PSD) and Title V operating permit requirements apply to facilities whose potential to emit stationary source CO_2e emissions would exceed 100,000 tons per year. This changed in 2014 when the Supreme Court decision in Utility Air Regulatory Group v. EPA, et al. (Supreme Court Case 12-1146) found that the EPA does not have the authority to require PSD and Title V permitting for facilities based solely on GHG emissions. Rather, the Supreme Court found that the EPA can regulate GHG emissions from sources already subject to PSD and Title V operating permit requirements due to emissions of other pollutants.

The project will be subject to annual GHG emissions reporting under the EPA's MRR if the facility emits more than 25,000 metric tons of CO_2e per year. As demonstrated in Section 3.8.3, the facility's maximum potential GHG emissions will exceed 25,000 metric tons of CO_2e per year. However, actual operations are expected to be up to 50 percent less than the maximum potential. Additionally, the facility will not be subject to PSD and Title V operating permit requirements as emissions of other pollutants resulting from maximum potential operations are expected to be below the applicable thresholds, as demonstrated in Section 3.3.

State Laws and Policies

Executive Order S-3-05, issued in 2005, established GHG emissions reduction targets for the state of California. The targets called for a reduction of GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. The California Environmental Protection Agency Secretary is required to coordinate the development and implementation of strategies to achieve the GHG reduction targets.

In 2006, the California State Legislature passed the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32), which provides the framework for regulating GHG emissions in California. This law requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. The statewide 2020 emissions limit is 431 million metric tons of CO_2e (CARB 2017a).

Part of CARB's direction under AB 32 was to develop a scoping plan that contains the main strategies California will use to reduce the GHG emissions that contribute to climate change. CARB first approved the AB 32 Scoping Plan in 2008 and released its latest update in 2017. The Scoping Plan includes a range of GHG reduction actions, which include the following: direct regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms such as a cap-and-trade system; and a fee regulation to fund the AB 32 program. CARB has recently initiated

development of the update to the Scoping Plan. This update is due in 2022 and will lay out a path for achieving carbon neutrality by 2045, as well as incorporate and assess progress towards the 2030 emissions reduction targets and new initiatives described below (CARB 2021b)

One key regulation resulting from AB 32 was CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, which came into effect in January 2009, with the most recent amendments in 2018. This regulation requires annual GHG emissions reporting from electric power entities, fuel suppliers, CO_2 suppliers, operators of petroleum and natural gas systems, and industrial facilities that emit 10,000 metric tons or more of CO_2e per year from stationary combustion and/or process sources. Annual verification of reported emissions is also required for facilities that emit 25,000 metric tons or more of CO_2e per year. The project will be subject to annual GHG emissions reporting and verification under this regulation if its stationary combustion GHG emissions are above the verification threshold of 25,000 metric tons of CO_2e per year. As demonstrated in Section 3.8.3, the project's maximum potential stationary combustion GHG emissions will exceed the verification threshold; however, actual operations are expected to be up to 50 percent less than the maximum potential.

Another key regulation resulting from AB 32 was CARB's adoption of the California Cap-and-Trade Program in October 2011, with the most recent amendments in 2018. Under the California Cap-and-Trade Program, covered entities have an obligation to secure GHG allowances and/or offsets to match every metric ton of CO_2e for which a positive or qualified positive emissions data verification statement is issued (CARB 2021a). This program was extended from January 1, 2021 through December 31, 2030 with the passing of AB 398 in July 2017. AB 398 also prevents local air districts from adopting or implementing a CO_2 emissions reduction rule from stationary sources already subject to the Cap-and-Trade Program and modified the Cap-and-Trade Program compliance offset usage limits (Climate Action Reserve 2017). The project will be subject to the California Cap-and-Trade Program if the facility emits more than 25,000 metric tons of CO_2e per year.

To best support GHG emissions reduction consistent with AB 32, CARB released the Short-Lived Climate Pollutant (SLCP) Reduction Strategy in March 2017. This plan, required by Senate Bill (SB) 605 (the Small Business Procurement and Contract Act), establishes targets for statewide reductions in SLCP emissions of 40 percent below 2013 levels by 2030 for CH_4 and hydrofluorocarbons and 50 percent below 2013 levels by 2030 for anthropogenic black carbon (CARB 2017b). The SLCP Reduction Strategy was integrated into the 2017 update to CARB's Scoping Plan.

In 2006, the California Public Utilities Commission and California Energy Commission established requirements for utilities under the Electricity Greenhouse Gas Emission Standards Act (SB 1368[2]), which requires that generation and contracts be subject to a GHG Environmental Performance Standard of 1,100 pounds (or 0.5 metric ton) of CO_2 per megawatt-hour (MWh) of electricity produced. The GHG Environmental Performance Standard applies to base load power from new power plants, new investments in existing power plants, and new or renewed contracts with terms of 5 years or longer, including contracts with power plants located outside of California. Implementation of the AB 32 Scoping Plan requires careful coordination on the state's energy policies, meaning that the California Public Utilities Commission and CARB must work closely to implement the recommendations in the Scoping Plan. The project will not be subject to this GHG Environmental Performance Standard, as it is not a new or existing power plant and does not establish or renew a power contract.

California initially established its Renewables Portfolio Standard (RPS) in 2002, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. State energy agencies recommended accelerating that goal, and California Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity goal by 2020, consistent with the AB 32 Scoping Plan. In April 2011, SB 2 of the First Extraordinary Session (SB X1-2)

[2] Public Utilities Code Section 8340 et seq.

was signed into law. SB X1-2 expressly applies the new 33 percent RPS to all retail sellers of electricity by December 31, 2020, and establishes renewable energy standards for interim years prior to 2020.

On April 29, 2015, Governor Brown issued Executive Order B-30-15, directing state agencies to implement measures to reduce GHG emissions 40 percent below their 1990 levels by 2030 and to achieve the previously stated goal of an 80 percent GHG reduction by 2050. On September 8, 2016, SB 32, codified as Section 38566 of the Health and Safety Code, was enacted. It extends California's commitment to reduce GHG emissions by requiring the state to reduce statewide GHG emissions by 40 percent below 1990 levels by 2030. In response, CARB updated the AB 32 Scoping Plan in November 2017 to establish a path that will get California to its 2030 target.

On October 7, 2015, SB 350 was signed into law, establishing new clean energy, clean air, and GHG reduction goals for 2030 and beyond. SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. SB 100, signed into law on September 10, 2018, advances the RPS deadlines to 50 percent renewable resources by December 31, 2026, and 60 percent by December 31, 2030. In addition, SB 100 establishes policy that renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity by December 31, 2045.

In May 2016, CARB prepared the Mobile Source Strategy, which addresses the current and proposed programs for reducing all mobile source emissions, including GHG emissions. The Mobile Source Strategy identifies programs that the state and federal government have or will adopt, which further the goals of the Scoping Plan. Some programs provide incentives to facilitate increased purchase of new, lower emission light-, medium-, and heavy-duty vehicles to aid the state in achieving emission reduction goals. Other programs require certain engine years to upgrade the engine to newer, cleaner engines by specific dates or strict performance standards for specific model years. These programs for more stringent emissions are required by state and federal law and are monitored by CARB or the EPA.

Regional Plans and Programs

The Bay Area Air Quality Management District (BAAQMD) adopted the *2017 Bay Area Clean Air Plan* on April 19, 2017 (BAAQMD 2017a). The 2017 Clean Air Plan provides a regional strategy to protect public health and the climate. To protect public health, the plan describes how the BAAQMD will continue its progress toward attaining all state and federal ambient air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG emission reduction targets for 2030 and 2050, and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG emission reduction targets.

BAAQMD publishes CEQA Guidelines (last updated May 2017 [BAAQMD 2017b]) to assist lead agencies in evaluating a project's potential impacts on climate change. The CEQA Guidelines describe the criteria BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects will have significant adverse environmental impacts, identifies methodologies for estimating project GHG emissions and predicting potential impacts, and identifies measures that can be used to avoid or reduce climate change impacts.

Under the requirements of SB 375, all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of a Regional Transportation Plan. In the Bay Area, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing to meet GHG reduction targets set by CARB. In July 2017, the MTC and ABAG approved *Plan Bay Area 2040*, which is a strategic update to the previous plan approved in July 2013. The Bay Area GHG reduction targets established by CARB in September 2010 include a seven percent reduction in GHG emissions per capita from passenger vehicles by 2020 compared to 2005 emissions. Similarly, *Plan Bay Area 2040* targets reducing GHG emissions per capita from passenger vehicles 15 percent by 2035 compared to 2005 emissions. The emission reduction targets are limited to those projects associated with

land use and transportation strategies and align with the strategies identified in the BAAQMD's 2017 Clean Air Plan (MTC & ABAG 2017).

Local Plans and Policies

Envision San José 2040 General Plan. The *Envision San José 2040 General Plan* was adopted by the City Council in November 2011, and most recently amended in May 2021. The City's progress towards achieving key goals are evaluated every 4 years. This General Plan centers on 12 major strategies that reflect the community's desire to see San José grow into a more prominent city through 2040, while taking on a growing environmental and economic leadership role (City of San José 2021b). The General Plan provides the basis for the City's GHG Reduction Strategy while expanding upon San José's Green Vision. Both of these climate-specific plans are described in the following paragraphs.

Green Vision and Climate Smart San José. The *Green Vision*, adopted in October 2007, was a 15-year sustainability plan to steer economic growth while reducing GHG emissions. Its 10 goals included supporting the development of new clean technology industries; becoming more energy efficient; producing and using electricity from clean and renewable sources; constructing green buildings; diverting waste from landfills; and expanding recycled water (City of San José 2021c).

Climate Smart San José replaced the *Green Vision* in February 2018 and has nine overarching strategies to reduce GHG emissions while assuring a long-term water supply. This plan charts a course to meeting the GHG emission reduction targets of the international Paris Agreement, which calls for limiting the rise in average global temperature to below 2 degrees Celsius (City of San José 2021a).

City of San José GHG Reduction Strategy. The *City of San José 2030 GHG Reduction Strategy* is a comprehensive plan to achieve the City's share of statewide emissions reductions for the 2020 and 2030 timeframes established by AB 32 and SB 32, respectively, while meeting the mandates outlined in the BAAQMD's CEQA Guidelines and considering the state's long-term carbon neutrality goal. Adopted in June 2011, and most recently amended in August 2020, the Strategy identifies GHG emissions reduction measures to be implemented by development projects as part of four categories: buildings and energy; land use and transportation; recycling and waste; and other GHG reduction areas (City of San José 2020). Some measures are mandatory for all proposed development projects and others are voluntary, where voluntary measures could be incorporated as mitigation measures at the City's discretion.

CEQA clearance for development projects is required to address the consistency of individual projects with the goals and policies in the General Plan designed to reduce GHG emissions. The Compliance Checklist, provided as an attachment to the GHG Reduction Strategy, provides a procedure by which an individual project can demonstrate its consistency with the GHG Reduction Strategy and, accordingly, the General Plan. This checklist identifies applicable regulations, applicability, requirements, and the required monitoring and reporting for new development projects within the City's jurisdiction (City of San José 2020). Compliance with the GHG Reduction Strategy would demonstrate less-than-significant impacts under CEQA.

City of San José Natural Gas Infrastructure Prohibition and Reach Code Ordinances. In support of *Climate Smart San José*, the City of San José approved a Reach Code Ordinance in September 2019 encouraging building electrification and energy efficiency and solar- and electric vehicle-readiness for non-residential buildings. The City of San José supplemented the Reach Code Ordinance with approval of the Natural Gas Infrastructure Prohibition in October 2019, which prohibits natural gas in newly constructed residential buildings. Updates to the Natural Gas Infrastructure Ordinance were approved in December 2020, which extend the natural gas prohibitions to all buildings (residential and non-residential) constructed after August 1, 2021 unless a limited or hardship exemption is permitted (City of San José 2021d). As described in Section 3.3, the project's natural gas-fired generators will meet the distributed generation criteria pollutant emission standards of 17 CCR 94203. Therefore, the entire facility will qualify

for a limited exemption under Section 17.845.040[3] of the San José Municipal Code as the project includes a Distributed Energy Resource[4].

3.8.1.2 Existing Conditions

The City prepares an annual report to assess progress towards meeting the GHG reduction targets established in the GHG Reduction Strategy and to recommend next steps to help the City meet its targets. This report also tracks changes in community-wide GHG emissions since 2008, which is the City's base year for tracking against the 2020 emissions reduction targets. Table 3.8-1 summarizes the City's 2017 GHG emissions inventory, which is the most recent inventory available (ICLEI 2019). As stated in the *City of San José 2030 GHG Reduction Strategy*, 2017 is the City's base year for tracking against the 2030 emissions reduction targets (City of San José 2020).

This GHG emissions inventory includes direct and indirect GHG emissions attributable to human activities. As shown in Table 3.8-1, transportation emissions, from on- and off-road vehicles, railcars, pleasure boats, and in-boundary flights, were the largest source of emissions, comprising 63 percent. Residential, commercial, and industrial energy, including electricity and natural gas use, were the next largest sources of emissions, comprising 13, 11, and 7 percent, respectively. Each of the other sectors represented 5 percent or less of total emissions, including solid waste disposal, the transmission and treatment of water and sewage, and natural gas distribution (ICLEI 2019).[5]

Table 3.8-1. City of San José 2017 Greenhouse Gas Emissions Inventory

End-Use Sector	Total Emissions (%)	CO_2e Emissions (Metric Tons per Year)
Residential Energy	13	763,961
Commercial Energy	11	627,496
Industrial Energy	7	399,690
Transportation and Mobile Sources	63	3,589,159
Solid Waste	5	271,862
Water and Wastewater	<1	29,235
Process and Fugitive Emissions	<1	30,262
Total	100	5,711,665

Source: ICLEI 2019

3.8.2 Methodology and Significance Criteria

3.8.2.1 Methodology

Emissions of CO_2e from short-term project demolition and construction activities were evaluated, with detailed emission calculations presented in Appendix 3.3A, including the assumptions employed. Demolition and construction-related GHG emissions from the project will result from fuel combustion in construction equipment and on- and offsite vehicle trips, such as material haul trucks, worker commutes,

[3] Per Section 17.845.040 of the San José Municipal Code, the requirements of Chapter 17.845 do not apply to newly constructed facilities built by December 31, 2024 with a physical connection to the electrical grid and a Distributed Energy Resource for necessary operational requirements to protect the public health, safety, or economic welfare in the event of an electric grid outage. In December 2024 this exemption will be re-evaluated..

[4] As defined in Section 17.845.020 of the San José Municipal Code, a Distributed Energy Resource is an electric generation or storage technology that complies with the emissions standards adopted by CARB pursuant to the distributed generation certification requirements of 17 CCR 94203.

[5] Emissions from the residential, commercial, and industrial energy sectors have decreased the most over time, likely as a result of PG&E's cleaner electricity portfolio and reduced energy consumption.

and delivery vehicles. Emissions were estimated using construction equipment fuel consumption from the OFFROAD2017 Web Database[6], vehicle fuel economy from the EMFAC2017 Web Database[7], vehicle idling emission factors from EMFAC2017, and emission factors by fuel type and/or vehicle category from The Climate Registry (TCR 2021). Although construction activities are expected to begin in 2022, 2020 and 2021 emission factors were used to provide a more conservative emissions assessment due to the higher emission factors assumed in the model.

Emissions of CO_2e from long-term project operations were also evaluated, with detailed emission calculations presented in Appendix 3.3B, including the assumptions employed. Emissions will result from operation of 224 natural gas-fired generators, 2 administrative diesel-fired generators, offsite vehicle trips for worker commutes and material deliveries, cooling units, and facility upkeep (such as architectural coatings, consumer product use, landscaping, comfort heating, water use, waste generation, and electricity use). Natural gas and diesel stationary combustion emissions were estimated using emission factors from the EPA's MRR, as presented in 40 Code of Federal Regulations (CFR) 98.33. Vehicle emissions were estimated using vehicle fuel economy from the EMFAC2017 Web Database, vehicle idling emission factors from EMFAC2017, and emission factors by fuel type or vehicle category, or both, from The Climate Registry. Although facility operation is expected to begin in 2024, 2021 emission factors were used to provide a more conservative emissions assessment due to the higher emission factors assumed in the model. Facility upkeep emissions were estimated using the California Emissions Estimator Model (CalEEMod), based on the square footage of the buildings to be constructed, paved areas, and project-specific electricity and water use. The CalEEMod output is included in Appendix 3.3B.

The cooling-related emissions will result from use of refrigerants in operation of two packaged air handling units and up to 72 split system condensing units used for administrative purposes or generator cooling. Based upon manufacturer data, each packaged air handling unit contains 150 pounds of R-410A, each of the eight split system condensing units used for administrative purposes contains 57 pounds of R-410A, and each of the 64 split system condensing units used for generator cooling contains 10 pounds of R-410A, for a facility total of 1,396 pounds of R-410A. Based on the conservative allowable annual leak rate of 20 percent for commercial cooling equipment, per 40 CFR 82.157(c)(2)(i), the maximum expected refrigerant leak mass will be approximately 279 pounds of R-410A per year. Use of a global warming potential of 1,923.5, from the Intergovernmental Panel on Climate Change's 5th Assessment Report (IPCC 2014), indicates a maximum allowable refrigerant release of approximately 244 metric tons of CO_2e per year. Details of these emission calculations are included in Appendix 3.3B.

3.8.2.2 Significance Criteria.

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project" (AEP 2019). As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting (AEP 2019). CEQA allows for significance criteria established by air pollution control district(s) to be used to assess the impact of a project related to GHG emissions, at the discretion of the reviewing agency.

As discussed, BAAQMD has published CEQA Guidelines that include recommended thresholds for use in determining whether projects will have significant adverse environmental impacts.[8] Specifically, BAAQMD has adopted a threshold of 1,100 metric tons of CO_2e per year for evaluating climate change impacts from land use development projects and a threshold of 10,000 metric tons of CO_2e per year for evaluating climate change impacts from stationary source projects. Land use development projects include

[6] The OFFROAD2017 Web Database is available at: https://www.arb.ca.gov/orion/.

[7] The EMFAC2017 Web Database is available at: http://www.arb.ca.gov/emfac/2017/.

[8] BAAQMD has initiated an update to its current CEQA Guidelines and thresholds of significance to reflect new or revised requirements in the State CEQA Guidelines, recent court decisions, improved analytical methodologies, and new mitigation strategies. However, until new guidance is approved, the thresholds of significance from the 2017 CEQA Guidelines are still considered appropriate for determining a project's significance.

residential, commercial, industrial, and public land uses and facilities, whereas stationary source projects include land uses that will accommodate processes and equipment that emit GHG emissions and require a local air district permit to operate (BAAQMD 2017b). Given that the project will accommodate natural gas and diesel generators requiring BAAQMD permits to operate, the stationary source project threshold is applicable to this project, instead of the land use development project threshold.

The BAAQMD's 10,000 metric tons of CO_2e per year 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 Air Basin (BAAQMD 2017b). The project's natural gas and administrative generators will be permitted sources, and the BAAQMD's 10,000 metric tons of CO_2e per year threshold was used to analyze the significance of emissions that will be produced by the generators. The BAAQMD's CEQA significance thresholds apply to stationary source GHG emissions and to GHG emissions due to construction. Therefore, emissions from mobile sources and area sources, such as electricity use and water delivery, associated with project operation were not included for comparison to this threshold, based on guidance in the BAAQMD's CEQA Guidelines (BAAQMD 2017b).

Therefore, GHG impacts from the project's natural gas and administrative generators will be considered to have a less-than-significant impact if estimated emissions are below the BAAQMD's threshold of 10,000 metric tons of CO_2e per year. Furthermore, GHG impacts from all other project-related emission sources will be considered to have a less-than-significant impact if the project is consistent with the *City of San José 2030 GHG Reduction Strategy* and applicable regulatory programs and policies adopted by CARB or other California agencies. Consistency with the GHG Reduction Strategy was determined through completion of the City's Compliance Checklist.

3.8.3 Environmental Impacts and Mitigation Measures

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact with Mitigation Incorporated. As shown in Table 3.8-2, maximum potential operation of the natural gas and administrative generators for maintenance and testing, load shedding, demand response, and behind the meter RA ancillary services, maintenance and testing, and emergency use and diesel-powered administrative generators for maintenance and testing, as applicable, will generate 33,577 metric tons of CO_2e per year, which exceeds the BAAQMD's stationary source threshold of 10,000 metric tons of CO_2e per year. Therefore, project operation will have a potentially significant impact on the environment without mitigation, consistent with the BAAQMD CEQA guidance for stationary sources. If actual emissions are also greater than 25,000 metric tons of CO_2e per year, the project will be subject to CARB's Cap-and-Trade Program and required to secure and surrender compliance obligations or offsets equivalent to the project's actual annual GHG emissions. This requirement effectively mitigates the project's stationary source GHG emissions to 0 metric tons of CO_2e per year and reduces the project's potential impact to less than significant with mitigation incorporated. To ensure compliance with CARB's Cap-and-Trade Program offset requirements, if required, the project has incorporated Project Design Measure GHG-PD-1 below.

> **GHG-PD-1.** The project owner shall provide annual documentation demonstrating compliance with the CARB Cap-and-Trade Program and specifically documentation demonstrating that it has sufficiently secured offsets equivalent to the project's actual annual GHG emissions that are sufficient to meet the CARB Cap-and-Trade Program performance standards and requirements. Implementation of this mitigation measure will only be required if the project's actual annual GHG emissions do trigger participation in the CARB Cap-and-Trade Program.

If actual emissions are less than 25,000 metric tons of CO_2e per year, the project will not be subject to CARB's Cap-and-Trade Program and will not be required to secure and surrender compliance obligations or offsets. However, the project does intend to utilize renewable natural gas and

renewable diesel in its stationary combustion sources to the extent feasible, thereby increasing the portion of biogenic CO_2 emitted by the project. If utilized, the CO_2 emissions resulting from combustion of these renewable fuels would be excluded from the project's GHG emissions when compared to the BAAQMD's stationary source threshold of 10,000 metric tons of CO_2e per year.[9] This would likely reduce the project's GHG emissions well below the BAAQMD's stationary source threshold and similarly reduce the project's potential impact to less than significant with mitigation. The project has incorporated Project Design Measure GHG-PD-2 below to encourage the use of renewable fuels.

GHG-PD-2. The project owner will utilize renewable natural gas and renewable diesel to the maximum extent feasible, which may require securing renewable fuel from PG&E and other suppliers.

Table 3.8-2. Greenhouse Gas Emissions from Stationary Sources During Project Operation

Source	Annual Emissions (Metric Tons per Year of CO_2e)
Stationary Sources – Natural Gas and Administrative Generators	33,577 [a]
BAAQMD Threshold	10,000
Exceeds BAAQMD Threshold (Y/N)?	**Yes**
CARB Cap-and-Trade Threshold	25,000
Exceeds CARB Cap-and-Trade Threshold (Y/N)?	**Yes**

[a] Emission estimates are based on maximum potential facility operation; actual facility operation is expected to be up to 50 percent less. Additionally, these emissions are expected to be mitigated to less than the BAAQMD Threshold through implementation of Project Design Measures GHG-PD-1 and GHG-PD-2, as applicable.

Source: BAAQMD 2017b

Demolition and Construction Emissions. As discussed, demolition[10] and construction of the project will result in GHG emissions generated by on- and offsite vehicle trips (material haul truck, worker commute, and delivery vehicle trips) and operation of construction equipment. These sources will generate approximately 3,800 metric tons of CO_2e during the 17-month construction period, which includes a 1-month demolition period. Because demolition and construction emissions will cease once construction is complete, they are considered short-term. The BAAQMD's CEQA Guidelines do not identify a GHG emission threshold for demolition and construction-related emissions. Instead, BAAQMD recommends that GHG emissions from demolition and construction be quantified and disclosed. BAAQMD further recommends incorporation of Best Management Practices (BMPs) to reduce GHG emissions during demolition and construction, as feasible and applicable. BMPs may include use of alternative-fueled (for example, biodiesel or electric) construction vehicles and equipment for at least 15 percent of the fleet, use of at least 10 percent of local building materials, and recycling or reusing at least 50 percent of demolition and construction waste (BAAQMD 2017b), although none of these BMPs are assumed for purposes of this analysis.

Operational Emissions. As stated, GHG emissions from project operation will consist of emissions from operation of the natural gas-fired generators, administrative diesel-fired generators, and cooling units; offsite vehicle trips for worker commutes and material deliveries; and facility upkeep, including architectural coatings, consumer product use, landscaping, comfort heating, water use, waste generation, and electricity use. Project-specific details of these emission sources are provided in this section, as available.

[9] BAAQMD's CEQA guidance indicates that "biogenic CO_2 emissions should not be included in the quantification of GHG emissions for a project" (BAAQMD 2017b).

[10] Limited demolition is anticipated at the site as the 2 vacant residences and a storage shed/warehouse onsite, were demolished in 2021 after a fire significantly affected the safety of one of the dwellings.

Project Stationary Combustion Sources. Each natural gas-fired generator will be operated up to 500 hours per year for load shedding, demand response and behind the meter RA ancillary services, and up to 9 hours per year for maintenance and testing purposes. However, actual operation of each natural gas-fired generator for load shedding, demand response and behind the meter RA ancillary services is not expected to exceed 180 hours per year, with historical maximums of approximately 27 hours per year at other facilities. The administrative diesel-fired generators will be operated only for maintenance and testing purposes, with non-emergency operation of each generator limited by permit to a maximum of 42 hours per year.

Project Cooling Units. As stated previously, the cooling-related fugitive emissions will result from use of refrigerants in operation of two packaged air handling units and up to 72 split system condensing units used for administrative purposes or generator cooling. Based upon manufacturer data, the facility's total capacity will be 1,396 pounds of R-410A. Using a conservative allowable annual leak rate of 20 percent for commercial cooling equipment, per 40 CFR 82.157(c)(2)(i), the maximum expected refrigerant leak mass will be approximately 279 pounds of R-410A per year or 244 metric tons of CO_2e per year.

Project Comfort Heating. The project will include two natural gas-fired water heaters (one per building) for comfort heating, each with a heat input rating not to exceed 1 MMBtu/hr. As discussed in Section 3.3, these water heaters will be exempt from permitting under BAAQMD Rule 2-1-114.

Project Electricity Usage. The primary function of the data center is to house computer servers, which require electricity 24 hours a day to operate. The expected demand for the entire project is 77 MW, or 674,250 MWh per year. To provide a more conservative estimate, however, the maximum demand allowed for projects eligible for the Small Power Plant Exemption under California Energy Commission regulations (99 MW, or 867,240 MWh per year) was used in this analysis. Considering the building square footage, this maximum electricity demand results in an intensity factor of 2,184.96 kilowatt-hours per square foot per year.

Project Mobile Emission Sources. Approximately 100 employees will be employed at the project site on a daily basis, split over three shifts, with approximately 30 daily vendor trips.

Project Water Consumption and Waste Generation. Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. Indoor uses at the project site will generate a water demand of approximately 535 acre-feet per year with recycled water being the primary source, based on availability from the City. Potable water use is expected to be less than 1 acre-foot per year. Daily operations at the data center will generate waste, which will result in fugitive GHG emissions during decomposition.

Summary of GHG Emissions. Emissions from stationary combustion sources, namely natural gas generator operation and maintenance and testing, as well as diesel generator maintenance and testing, are presented in Table 3.8-2. Estimated emissions from energy use, cooling units, mobile and area sources, water use, and waste generation (i.e., project operation) are summarized in Table 3.8-3.

Table 3.8-3. Greenhouse Gas Emissions from Energy Use, Cooling Units, Mobile Sources, Area Sources, Water Use, and Waste Generation During Project Operation

Source	Annual Emissions (Metric Tons per Year of CO_2e)
Energy Use[a]	253,841
Cooling Units	244
Mobile Sources[b]	455
Area Sources[c]	0.01
Water Use	514

Table 3.8-3. Greenhouse Gas Emissions from Energy Use, Cooling Units, Mobile Sources, Area Sources, Water Use, and Waste Generation During Project Operation

Source	Annual Emissions (Metric Tons per Year of CO_2e)
Waste Generation	248
Total	255,302

[a] Energy use emissions include emissions from electricity use and natural gas used for comfort heating.
[b] Mobile source emissions include emissions from worker commute and vendor trips.
[c] Area source emissions include emissions from architectural coatings, consumer products, and landscaping.

As compared to the CO_2e emissions in Table 3.8-1, the natural gas and administrative generators will comprise less than 1 percent of the total City GHG emissions. As shown in Table 3.8-3, operation of the project will generate 255,302 metric tons of CO_2e per year. Inclusion of emissions from the project's maximum possible electricity use, refrigerant leakage from cooling units, and other permit-exempt stationary and non-stationary sources will bring the project's contribution to a maximum of approximately 5 percent of the total City GHG emissions. This emissions estimate does not include efficiency measures that will be pursued as part of the project, nor does it reflect implementation of state and local measures to reduce GHG emissions (for example, SB 350 and SB 100). The project will comply with all applicable City and state green building measures, including Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, based on the 2019 Energy Efficiency Standards requirements, and the 2019 California Green Building Standards Code, commonly referred to as CALGreen (California Code of Regulations, Part 11). In addition, the project will include electrical vehicle charging stations as required. All required water use reduction measures will also be incorporated in the building design, including the use of recycled water in the fluid coolers when evaporative cooling is required[11].

Conclusion Based on the BAAQMD's CEQA guidance for stationary-source projects, the threshold to determine the significance of an impact from GHG emissions is 10,000 metric tons of CO_2e per year. Stationary-source projects include land uses that will accommodate processes and equipment that emit GHG emissions and will require a BAAQMD permit to operate. If estimated annual emissions of operational-related GHGs exceed these levels, the project will result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change unless sufficiently mitigated. For the project, estimated stationary source emissions (i.e., the 224 natural gas-fired generators and 2 administrative diesel-fired generators) will exceed the 10,000 metric tons of CO_2e per year threshold but will be completely offset through participation in CARB's Cap-and-Trade Program or substantially mitigated through the use of renewable fuels. Compliance with Project Design Measures GHG-PD-1 and GHG-PD-2, as applicable, would ensure that the project's operation-related GHG emissions will not be cumulatively significant.

b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. The project will not conflict with any applicable plan, policy, or regulation adopted to reduce GHG emissions. The *City of San José 2030 GHG Reduction Strategy*, which is part of the *Envision San José 2040 General Plan*, identifies a series of GHG emissions reduction measures to be implemented by development projects that will allow the City to achieve its GHG reduction goals through 2050. The measures are sorted into three key categories: buildings and energy; land use and transportation; and recycling and waste. The GHG Reduction Strategy includes measures applicable to City government and existing and new development projects in the City. Discussion of the project's conformance with the applicable reduction measures for new development in the GHG Reduction Strategy are provided in subsequent text.

[11] The fluid coolers are of a hybrid design, meaning that they normally operate in air cooling only mode, but will enable evaporative cooling when ambient temperatures exceed 75 degrees Fahrenheit.

Energy Efficiency Measures. Measure MS-2.8 of the *Envision San José 2040 General Plan* requires evaluating operational energy efficiency and inclusion of operational design measures consistent with benchmarks, such as those in the EPA's EnergyStar Program for new data centers. The EnergyStar score for data centers applies to spaces specifically designed and equipped to meet the needs of high-density computing equipment, such as server racks used for data storage and processing. The objective of the EnergyStar score is to provide a fair assessment of the energy performance of a property relative to its peers, taking into account the climate, weather, and business activities at the property (EPA 2021). Based on current designs, the project will have an EnergyStar score indicating better-than-average performance relative to other data centers, because, for instance, the project incorporates the following design features: use of recycled water, drought-tolerant, native landscaping, and minimal glazing to reduce energy losses.

Power Usage Effectiveness (PUE) is another 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) (server) power draw (for example, PUE = Total Facility Source Energy/IT Source Energy), and generally ranges from 1.25 to 3.0 for most data centers (EPA 2021). For example, a PUE of 2 means that the data center or laboratory must draw 2 watts of electricity for each 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 where all power drawn by the facility goes to the IT infrastructure. With implementation of the proposed mechanical and electrical design of the building and the anticipated data center occupancy, the project's annual average PUE will be 1.20 or better.

Water Conservation Measures. Development standards for water conservation will be applied to increase efficiency in indoor and outdoor water use areas in accordance with all applicable requirements and standards. Specifically, the project will comply with all applicable City and state water conservation (indoor and outdoor) measures, including Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, based on the 2019 Energy Efficiency Standards requirements, and CALGreen. For the project, these measures will include the following:

- Water efficient landscaping with low-usage plant material to minimize irrigation requirements
- Sourcing of site irrigation from 100 percent non-potable water, based on availability of recycled water
- Use of recycled water in fluid coolers when evaporative cooling is required
- Use of ultra-low flow toilets and plumbing fixtures consistent with CalGreen mandatory measures for water reduction

Applicable General Plan Policies. The City adopted the *Envision San José 2040 General Plan* to accommodate planned housing and employment growth through 2035 and beyond to 2050. The General Plan includes goals and policies to address sustainability aimed at reducing the City's contribution to GHG emissions, many of which are specifically repeated in the City's GHG Reduction Strategy. For the project, implementation of policies that increase energy efficiency or reduce energy use (through confirmation of compliance with all applicable requirements, criteria, and standards) will effectively reduce indirect GHG emissions associated with energy generation. The consistency of the project with the applicable buildings and energy, land use and transportation, recycling and waste, and other GHG reduction area policies in the *City of San José 2030 GHG Reduction Strategy* is analyzed in Table 3.8-4. As shown, the project will be consistent with the applicable sustainability policies in the GHG Reduction Strategy. A completed Compliance Checklist is provided in Appendix 3.8A to further demonstrate the project's consistency with the GHG Reduction Strategy.

Table 3.8-4. Project Consistency with GHG Reduction Strategy Sustainability Policies

Emission Reduction Policies	Project Consistency
Buildings and Energy Policies	
MS-2.3: Encourage consideration of solar orientation, including building placement, landscaping, design, and construction techniques for new construction to minimize energy consumption.	Consistent. The project will use lighting control to reduce energy usage for new exterior lighting and air economization for building cooling, when feasible. Water-efficient landscaping and ultra-low flow plumbing fixtures in the proposed buildings will limit water consumption. Furthermore, the project will use materials (wallboard partitions, ceiling tiles, and floor surfaces) that include post-consumer waste and will set aside space for onsite solar panels. The Applicant will also purchase electricity from San José Clean Energy[12] and/or implement other emission reduction measures mutually agreeable to the City of San José.
MS-2.7: Encourage the installation of solar panels or other clean energy power generation sources over parking areas.	
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).	
MS-14.4: Implement the City's Green Building Policies, so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, passive solar building design, and planting of trees and other landscape materials to reduce energy consumption.	
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 GHG 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 those facilities to reduce GHG emissions.	Consistent. The project will be designed to have a PUE of 1.20 or better and an EnergyStar score indicating better-than-average performance relative to other data centers.
Land Use and Transportation Policies	
TR-2.8: Require new development 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.	Consistent. The project will include bicycle and pedestrian amenities and promote employee vehicle trip reductions consistent with the City's requirements.
TR-7.1: Require large employers to develop programs to reduce the vehicle trips and vehicle miles generated by their employees through the use of shuttles, provision for car-sharing, bicycle sharing, carpool, parking strategies, transit incentives, and other measures.	
TR-8.5: Promote participation in car share programs to minimize the need for parking spaces in new and existing development.	
TR-6.7: As part of the project development review process, ensure that adequate off-street loading areas in new large commercial, industrial, and residential developments are provided, and that they do not conflict with pedestrian, bicycle, or transit access and circulation.	Consistent. The project will provide off-street loading areas for material haul trucks and delivery vendors during both demolition/construction and operation.
CD-2.5: Integrate Green Building Goals and Policies of the *Envision San José 2040 General Plan* into site design to create healthful environments. Consider factors such as shaded parking areas, pedestrian connections, minimization of impervious surfaces, incorporation of stormwater treatment measures, appropriate building orientations, etc.	Consistent. The project will comply with all state green building practices, as required.

[12] "San José Clean Energy provides residents and businesses with post-competitive electricity with a higher percentage of renewable and carbon-free electricity than PG&E. [San José Clean Energy] gives customers options for their sources of electricity, including a 100 percent renewable energy option." (City of San José 2020)

Table 3.8-4. Project Consistency with GHG Reduction Strategy Sustainability Policies

Emission Reduction Policies	Project Consistency
Recycling and Waste Policies	
MS-6.5: Reduce the amount of waste disposed in landfills through waste prevention, reuse, and recycling of materials at venues, facilities, and special events.	Consistent. The project will promote waste prevention, reuse, and recycling in accordance with applicable requirements and standards.
Other GHG Reduction Areas	
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.	Consistent. The project will use water efficient landscaping with low water usage plant material to minimize irrigation requirements.
MS-3.2: Promote the use of green building technology or techniques that can help reduce the depletion of the City's potable water supply, as building codes permit. For example, promote the use of captured rainwater, graywater, or recycled water as the preferred source for non-potable water needs such as irrigation and building cooling, consistent with Building Codes or other regulations.	Consistent. The project will use recycled water for landscape irrigation and the fluid coolers. Ultra-low flow plumbing fixtures in the proposed buildings will also limit potable water consumption, consistent with water-efficient development.
MS-17.2: Ensure that development within San José is planned and built in a manner consistent with sustainable use of current and future water supplies by encouraging sustainable development practices, including low-impact development, water-efficient development, and green building techniques. Support the location of new development within the vicinity of the recycled water system and promote expansion of the system to areas planned for new development. Residential development outside of the urban service area will only be approved at minimal levels and only allowed to use non-recycled water at urban intensities. For residential development outside of the urban service area, restrict water usage to well water, rainwater collection or other similar sustainable practice. Non-residential development may use the same sources and potentially make use of recycled water, provided that its use will not result in conflicts with other General Plan policies, including ecologic or habitat impacts. To maximize the efficient and environmentally beneficial use of water, outside of the urban service area, limit water consumption for new development so that It does not diminish the water supply available for projected development within San José's urbanized areas.	
MS-19.4: Require the use of recycled water wherever feasible and cost-effective to serve existing and new development.	
MS-26.1: As a condition of new development, require the planting and maintenance of both street trees and trees on private property to achieve a level of tree coverage in compliance with and that implements City laws, policies or guidelines.	Consistent. The project's landscape will include drought-tolerant trees to provide adequate coverage.
ER-8.5: Ensure that all development projects in San José maximize opportunities to filter, infiltrate, store, and reuse or evaporate stormwater runoff onsite.	Consistent. The project will maximize reuse of stormwater runoff to the extent feasible.
ER-8.7: Encourage stormwater reuse for beneficial uses in existing infrastructure and future development through the installation of rain barrels, cisterns, or other water storage and reuse facilities.	

While not specifically identified as sustainability policies in the City's GHG Reduction Strategy, the *Envision San José 2040 General Plan* also includes a number of policies intended to minimize air pollutant and toxic air contaminant emissions from new and existing development, including during demolition and construction activities. As demonstrated in Section 3.3, the project will be consistent with these policies as follows:

- Assessing projected air emissions in conformance with the BAAQMD CEQA Guidelines and applicable state and federal standards, including preparation of a health risk assessment
- Identifying and implementing feasible air emission reduction measures

- Including dust, particulate matter, and construction equipment exhaust control measures, consistent with the mitigation measures recommended in the BAAQMD CEQA Guidelines

Bay Area 2017 Clean Air Plan. The *2017 Bay Area Clean Air Plan* includes performance objectives, consistent with the state's climate protection goals under AB 32 and SB 375, designed to reduce emissions of GHG emissions to 1990 levels by 2030 and 80 percent below 1990 levels by 2050. Due to the relatively high electrical demand of the project, energy efficiency measures will be included in the design and operation of the onsite electrical and mechanical systems.

Plan Bay Area 2040/California SB 375. Under the requirements of SB 375, the MTC and ABAG developed an SCS with the adopted *Plan Bay Area 2040* to achieve the Bay Area's regional GHG reduction target. *Plan Bay Area 2040* sets a 15 percent GHG emissions reduction per capita target from passenger vehicles by 2035 when compared to 2005 emissions. However, these emission reduction targets are only intended for projects associated with land use and transportation strategies. The project will generate 130 total daily vehicle trips, including vendors and employee trips. Due to the limited number of employees and visitors at the project site, the project will have less-than-significant traffic impacts during operation. Thus, the project will not contribute to a substantial increase in passenger vehicle travel within the region.

California SB 100. SB 100 advances the RPS renewable resources requirement to 50 percent by 2026 and 60 percent by 2030. It also requires renewable energy resources and zero-carbon resources to supply 100 percent of all retail sales of electricity by 2045. This requirement applies to PG&E, which will be the project's primary source of electricity supply.

AB 32 Scoping Plan. The vast majority of the project's GHG emissions will result from energy use. Multiple AB 32 Scoping Plan measures address GHG emissions from energy. For example, the Cap-and-Trade Program, through the regulation of upstream electricity producers, will account for GHG emissions from the project's energy consumption and require emissions from covered sectors to be reduced by the amounts needed to achieve SB 32's 2030 goal. By securing and surrendering compliance allowances or offsets equivalent to the project's direct stationary combustion GHG emissions as required by Project Design Measure GHG-PD-1, the project will itself comply with the Cap-and-Trade Program and support the goals of SB 32.

Conclusion. With implementation of the project's efficiency measures in accordance with all applicable laws and regulations and participation in the state's Cap-and-Trade Program, GHG emissions related to the project, including emissions associated with demolition, construction, operations, and maintenance, will be less than significant. The project will not conflict with the *City of San José 2030 GHG Reduction Strategy* or other plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. Although maximum potential stationary source emissions will exceed the BAAQMD's threshold of 10,000 metric tons of CO_2e per year, they will be completely offset through participation in the state's Cap-and-Trade Program as outlined in Project Design Measure GHG-PD-1 or substantially reduced through the use of renewable fuels as outlined in Project Design Measure GHG-PD-2.

Previously Identified Mitigation Measures: Project Design Measures GHG-PD-1 and GHG-PD-2

New Proposed Mitigation Measures: None

3.8.4 References

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3.11 Land Use and Planning

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

Environmental checklist established by CEQA Guidelines, Appendix G.

3.11.1 Setting

3.11.1.1 Site and Surrounding Land Uses

The San José Data Center (SJC) will be located within the City of San José on an approximately 64.5-acre site and will consist of two data center buildings totaling over approximately 396,914 square feet of space. The project will include 224 0.45-megawatt (MW) natural gas-fired generators to provide electrical power to support the electrical load of the data center buildings during utility outages or certain onsite electrical equipment interruptions or failures. Additionally, the use of the natural gas generators will enable the SJC to provide grid support through load shedding, demand response, and behind-the-meter Resource Adequacy (RA) ancillary services. In addition to these generators, the project will include two administrative Tier IV diesel-powered generators, rated at 1.25 MW and 0.5 MW, to support administrative functions during an interruption in the normal delivery of electrical power from the utility.

The project site has been used historically for farming since the early 1920s but is not currently in agricultural use and no dwellings or structures exist onsite[1]. To the north of the project site are the San José/Santa Clara Regional Wastewater Treatment Plant sludge drying beds, to the south is Highway 237, to the west is the Los Esteros Critical Energy Facility (LECEF), a PG&E substation, and to the east is Coyote Creek. The project is anticipated to begin construction in the 4th quarter of 2022, with operations beginning in the 1st quarter of 2024.

3.11.1.2 City of San José General Plan Land Use Designation

The project site is designated Light Industrial under the adopted *Envision San José 2040 General Plan* (Figure 3.11-1). This land use designation is defined as follows:

- This designation is intended for a wide variety of industrial uses and excludes uses with unmitigated hazardous or nuisance effects. Warehousing, wholesaling, and light manufacturing are examples of typical uses in this designation. Light Industrial designated properties may also contain service establishments that serve only employees of businesses located in the immediate industrial area. Office and higher-end industrial uses, such as research and development, are discouraged in order to preserve the scarce, lower cost land resources that are available for companies with limited operation history (i.e., start-up companies) or lower cost industrial operations.
- Because of the limited supply of land available for industrial/suppliers/services firms in the City, Land Use Policies in the General Plan restrict land use changes on sites designated Light Industrial. (City of San José 2011)

[1] There were 2 vacant residences and a storage shed/warehouse onsite, which were demolished in 2021 after a fire significantly affected the safety of one of the dwellings.

3.11.1.3 City of San José Zoning Ordinance

The project site was the subject of the City of San José 237 Industrial Center Project, for which a Final Environmental Impact Report (2017 EIR) was certified in September 2017 (City of San José 2017a). In October 2017, the City approved a Special Use Permit (SUP) (SP16-053) and a rezoning of the project site from A(PD) to LI Light Industrial, consistent with the General Plan land use designation of the site (City of San José 2017b).

The City's Municipal Code, Chapter 20.50 – Industrial Zoning Districts, describes allowed uses in the LI Light Industrial zone:

- The light industrial zoning district is intended for a wide variety of industrial uses and excludes uses with unmitigated hazardous or nuisance effects. The design controls are less stringent than those for the industrial park zoning district. Examples of typical uses are warehousing, wholesaling, and light manufacturing. Sites designated light industrial may also contain service establishments that serve only employees of businesses located in the industrial areas. In addition, warehouse retail uses may be allowed where they are compatible with adjacent industrial uses and will not constrain future use of the subject site for industrial purposes. When located within an area with a combined industrial/ commercial general plan designation, a broader range of uses will be considered including uses such as retail, church/ religious assembly, social and community centers, recreational uses, or similar uses but only when the non-industrial use does not result in the imposition of additional constraints on neighboring industrial users in the exclusively industrial areas. (City of San José 2019)

Municipal Code Section 20.50.100 further describes allowed uses and permit requirements in the Light Industrial zone. Table 20-110 of the Municipal Code identifies permitted, conditional, special, administrative, and restricted uses, in addition to land uses not permitted in each zone (City of San José 2019). Data centers are identified as a use that require a SUP within the Light Industrial zone.

A summary of development standards in the Light Industrial zone is provided in Table 3.11-1

Table 3.11-1. Summary of Development Standards, Light Industrial Zone

Requirement	Development Standard
Front Setback	15 feet to building
	20 feet to parking
Side Setback	0 feet, or 25 feet if adjacent to residential
Rear Setback	0 feet, or 25 feet if adjacent to residential
Maximum Height	50 feet unless a different maximum is established in Chapter 20.85 of the City of San José Zoning Ordinance[a]

[a] An alternative maximum height may be established as described in Chapter 20.85. Where an alternative maximum height restriction has been established as described in Chapter 20.85, that regulation described in Chapter 20.85 shall govern and control over the provisions in this section.