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Small Power Plant Exemption Application

SVY03A Data Center Campus

Prepared by

STATE OF CALIFORNIA
ENERGY COMMISSION
SINCE 1975

In Consultation with

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Section 1.0 Introduction

STACK Infrastructure (STACK) files this Application for a Small Power Plant Exemption (SPPE Application) pursuant to Public Resources Code Section 25541 and Section 1934 et seq. of the California Energy Commission (Commission) regulations for the 76.6 MW the SVY03A Data Center Campus (SVY03A Campus) located in the City of Hayward at 26203 Production Avenue. The SVY03A Campus will include a new three-story data center building (SVY03ADC1); a one-story smaller data center building (SVY03ADC2), backup generators to support both data centers (SVY03ABGF), a security building, an on-site project substation, and a Pacific Gas & Electric (PG&E) switching station. The SVY03A Campus will also include new site and infrastructure improvements consisting of new access driveways located at Eden Landing Road and Production Avenue, internal circulation improvements, parking, a loading dock, stormwater basins, landscaping, utilities, a water storage tank, and a perimeter security fence.

The SVY03ABGF will be an emergency backup generating facility with a generation capacity of up to 76.6MW to support the need for the SVY03ADC1 and the SVY03ADC2 to provide uninterruptible power supply for tenant's servers. The SVY03ABGF will consist of a total of twenty-eight (28) emergency generators arranged in two generation yards. The (26) 2.75 MW and the single 1 MW generators will serve the SVY03ADC1 and the single 1.6 MW generator will serve the SVY03ADC2. All of the generators would be dedicated to replacing the electricity needs of the SVY03A Campus in case of a loss of utility power (with redundancy).

Unlike the typical electrical generating facility reviewed by the Commission, the SVY03ABGF is designed to operate only when electricity from PG&E is unavailable to the SVY03A Campus. The SVY03ABGF will not be electrically interconnected to the electrical transmission grid. Rather, it will consist of one generation yard electrically interconnected solely to the SVY03A Campus.

Section 2 of the SPPE Application provides a detailed description of the construction and proposed operation of the SVY03ABGF. To describe the context of the SVY03ABGF and its role in serving the SVY03A Campus, Section 2 also includes a general description of the SVY03A Campus facilities.

Section 3 of the SPPE Application provides project information such as the project title, lead agency contact, project applicant, project location, assessor's parcel number, and general plan and zoning designations.

Section 4 of the SPPE Application includes environmental information and analyses in sufficient detail to allow the Commission to conduct an Environmental Impact Report consistent with the California Environmental Quality Act (CEQA) Guidelines.

Section 5, 6 and 7 include discussions of CEQA Mandatory sections required for an Environmental Impact Report.

Section 8 of the SPPE Application contains a discussion alternative backup generation configurations, technology, and alternative fuels considered by STACK.

Section 9 provides a list of References.

Section 10 provides a list of Agency Contacts and a list of Preparers of this application.

Section 11 provides a list of Acronyms and Abbreviations used in this application.

1.1 Need for Backup Generation

The primary goal of the SVY03A Campus is to be a state-of-the-art data center that provides greater than 99.999 percent reliability (fine nines of reliability). The SVY03A Campus data centers have been designed to reliably meet the increased demand of digital economy, its customers and the continued growth. The SVY03A Campus's purpose is to provide its customers with mission critical space to support their servers, including space conditioning and a steady stream of high-quality power supply. Interruptions of power could lead to server damage or corruption of the data and software stored on the servers by STACK's clients. The SVY03A Campus will be supplied electricity by PG&E through a new PG&E switchyard and a new STACK project substation, both constructed on the SVY03A Campus Site.

To ensure a reliable supply of high-quality power, the SVY03ABGF was designed to provide backup electricity to the SVY03ADC1 and SVY03DC2 only in the event electricity cannot be supplied from PG&E and delivered to the data center campus. To ensure no interruption of electricity service to the servers housed in the SVY03A Campus buildings, the servers will be connected to uninterruptible power supply (UPS) systems that store energy and provide near-instantaneous protection from input power interruptions. However, to provide electricity during a prolonged electricity interruption, the UPS systems will require a flexible and reliable backup power generation source to continue supplying steady power to the servers and other equipment. The SVY03ABGF provides that backup power generation source.

The SVY03A CAMPUS's Project Objectives are as follows:

- Develop a state of the art data center campus large enough to meet projected growth;
- Develop the data center campus on land that has been zoned for data center use at a location acceptable to the City of Hayward;
- To incorporate the most reliable and flexible form of backup electric generating technology into the SVY03ABGF considering the following evaluation criteria.
    - **Reliability.** The selected backup electric generation technology must be extremely reliable in the case of an emergency loss of electricity from the utility.
        - The SVY03ABGF must provide a higher reliability than 99.999 percent in order for the SVY03A Campus to achieve an overall reliability of equal to or greater than 99.999 percent reliability.

- The SVY03ABGF must provide reliability to greatest extent feasible during natural disasters including earthquakes.
- The selected backup electric generation technology must have a proven built-in resilience so if any of the backup unit fails due to external or internal failure, the system will have redundancy to continue to operate without interruption.
- The SVY03A Campus data center buildings must have on-site means to sustain power for 24-hours minimum in failure mode, inclusive of utility outage.
- Commercial Availability and Feasibility. The selected backup electric generation technology must currently be in use and proven as an accepted industry standard for technology sufficient to receive commercial guarantees in a form and amount acceptable to financing entities. It must be operational within a reasonable timeframe where permits and approvals are required.
- Technical Feasibility. The selected backup electric generation technology must utilize systems that are compatible with one another.

1.2 Commission SPPE Jurisdiction

STACK acknowledges that the Commission's authorizing statute grants exclusive authority for the Commission to issue licenses for the construction and operation of thermal power plants with generating capacities in excess of 50 MW. For thermal power plants with generating capacities greater than 50 MW but less than 100 MW, the Commission can grant an exemption from its licensing authority . The SVY03ABGF is not a typical power generating facility in that it consists of generators that can operate independently. In addition, the generators are arranged to support individual portions of the building within the data center. None of the generators will be interconnected to the electrical transmission system and therefore no electricity can be delivered off site.

1.3 Data Center Facilities Not Within Scope of SPPE

The SVY03A Campus data centers are not within the scope of the Commission's jurisdiction because the facilities do not constitute a thermal power plant. The SVY03A Campus is the sole consumer of the electricity produced by the SVY03ABGF. For development processing purposes, all of the facilities proposed for the site are included in a Conceptual Development Review (CDR) Application which has been filed with the City of Hayward (City). The City has reviewed the CDR Application and STACK is in the process of preparing an Application for Major Site Plan Review and any other requirements based on the comments and direction received from the City.

STACK believes that although the CEC is the lead agency for making a determination of whether the SVVY03ABGF is a thermal power plant that can qualify for a SPPE, the ultimate decision does not

extend to the SVY03A Campus facilities. STACK does acknowledge that the CEC should include the potential effects of the SVY03A Campus facilities in its CEQA analysis, but the ultimate determination of whether the SVY03A Campus should be approved, denied, or subject to mitigation measures is solely within the City's jurisdiction. To assist the CEC in preparing its CEQA document STACK provides a description of the SVY03A Campus in Section 2. The potential effects of the SVY03A Campus facilities are considered in environmental analyses of Section 4 in a manner to assist the Commission in evaluating combined impacts from the co-location of the SVY03ABGF and the SVY03A Campus.

To enable the City to timely conduct its review of the SVY03A Campus, STACK requests the Commission complete its review by Spring 2024 and within the Commission's statutory 135-day obligation.

Section 2.0 Project Description

2.1 Overview of Master Plan Development

STACK Infrastructure (STACK) is proposing to develop the SVY03A Data Center Campus (SVY03A Campus) located in the City of Hayward at 26203 Production Avenue. The SVY03A Campus will include a new three-story data center building (SVY03ADC1); a one-story smaller data center building (SVY03ADC2), backup generators to support both data centers (SVY03ABGF), a security building, an on-site project substation, and a PG&E switching station. The SVY03A Campus will also include new site and infrastructure improvements consisting of new access driveways located at Eden Landing Road and Production Avenue, internal circulation improvements, parking, a loading dock, stormwater basins, landscaping, utilities, water tank, and a perimeter security fence.

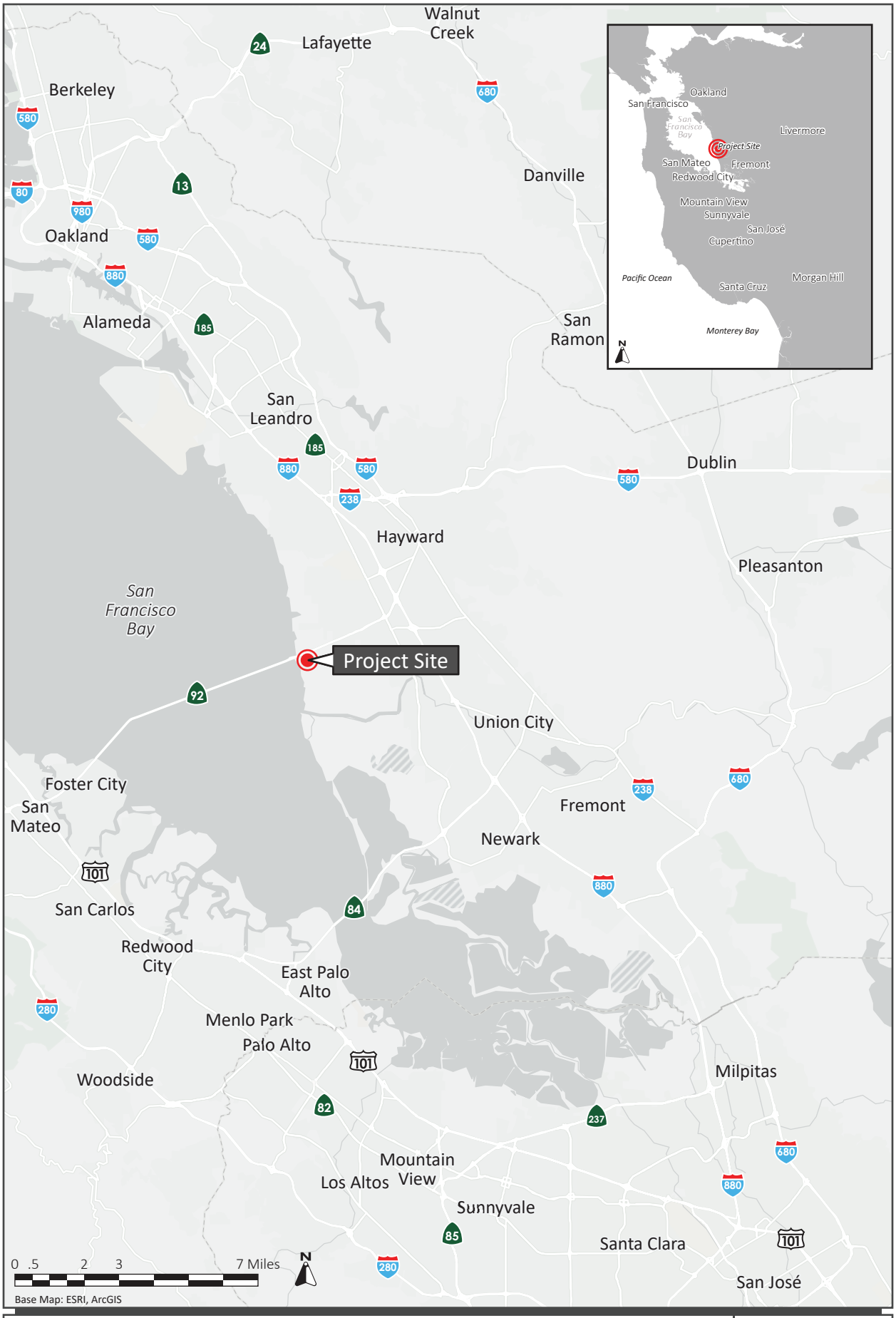
The SVY03ABGF will be an emergency backup generating facility with a generation capacity of up to 76.6MW to support the need for the SVY03ADC1 and the SVY03ADC2 to provide uninterruptible power supply for tenant's servers. The SVY03ABGF will consist of a total of twenty-eight (28) emergency generators arranged in two generation yards. The (26) 2.75 MW and the single 1 MW generators will serve the SVY03ADC1 and the single 1,6 MW generator will serve the SVY03ADC2. All of the generators would be dedicated to replacing the electricity needs of the SVY03A Campus in case of a loss of utility power (with redundancy).

The SVY03ABGF will only serve the SVY03A Campus and its components are described in detail in Section 2.0. The SVY03A Campus is described in Section 2.3. For development processing purposes, all of the facilities proposed for the site are included in a Conceptual Development Review (CDR) Application which has been filed with the City of Hayward (City). The City is currently reviewing the CDR Application and STACK will file a formal Application for Major Site Plan Review and any other requirements based on the comments and direction received from the City.

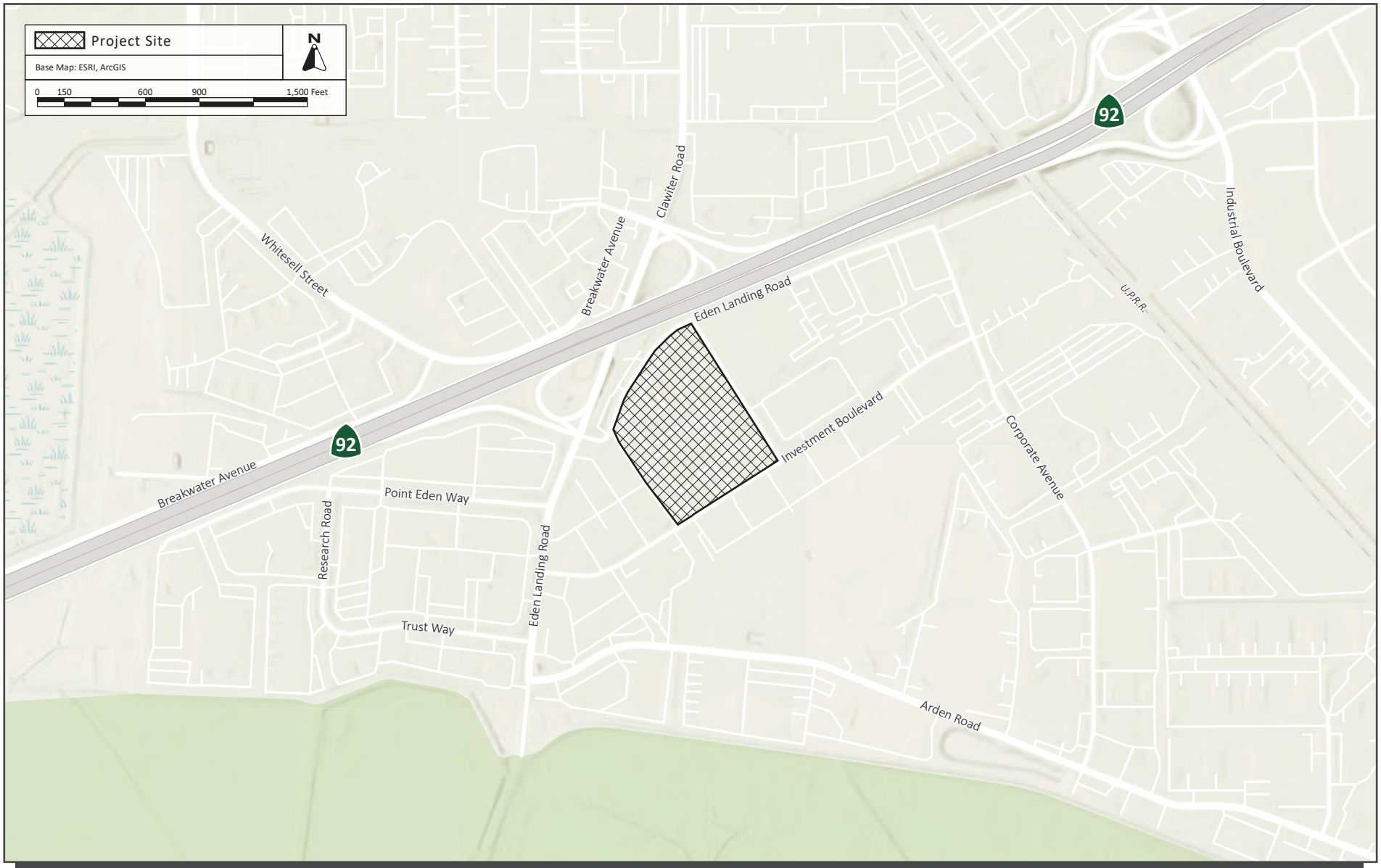
2.2 Generating Facility Description

2.2.1 Site Description

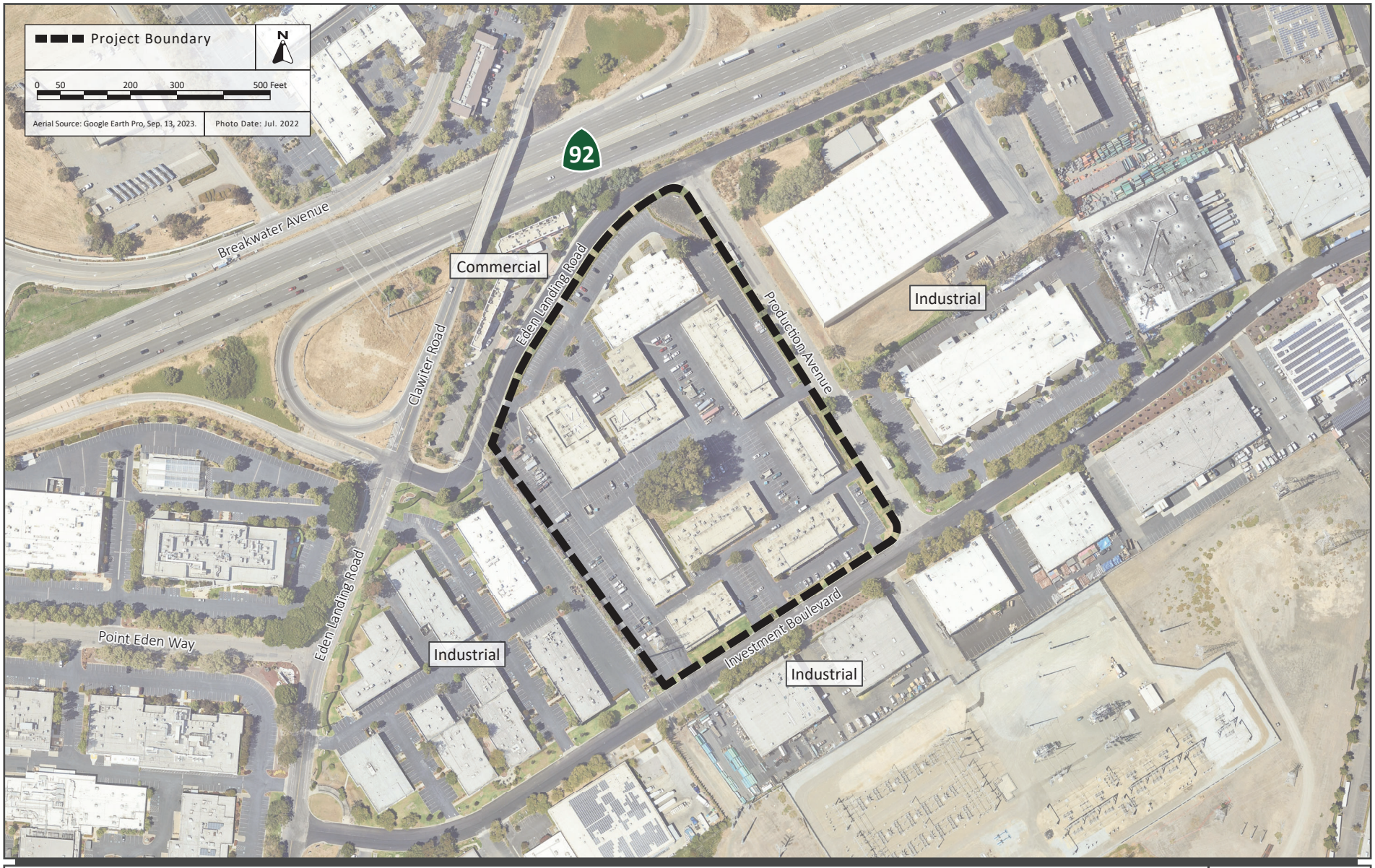
The proposed SVY03A Campus site consists of two contiguous parcels bounded by Eden Landing Road on the north, Production Avenue on the east, and Investment Boulevard on the south, and a developed parcel on the west (APNs 461-0085-016-00; 461-0085-052-01) ("Site"). The Site is approximately 11.3 acres (refer to Figure 2.2-1, Figure 2.2-2, Figure 2.2-3). The proposed data center use is allowed by the City's General Plan and Zoning Ordinance. The Site's General Plan land use designation is IC (Industrial Technology and Innovation Corridor). . This designation allows a wide range of office, business park, research and development, manufacturing, and information- and technology-based uses, including data centers. The project site is zoned IP (Industrial Park), which allows data center uses. The IP district implements the General Plan designation, and among other uses, expressly allows "data processing centers" and "computer, technical, or informational services."



REGIONAL MAP | FIGURE 2.2-1



VICINITY MAP | FIGURE 2.2-2



AERIAL PHOTOGRAPH AND SURROUNDING LAND USES | FIGURE 2.2-3

The site is currently developed as the Eden Landing Business Park and consists of nine existing one-story buildings with a total combined square footage of approximately 167,471 sf.[1] The buildings are multi-tenant warehouse/office/light-industrial buildings. The existing buildings consist of structural, tilt-up, precast concrete wall panels with steel columns with upper wood façade roofs and in some cases wood entrance canopies. None of the existing buildings have basements. The existing improvements were constructed between 1971 and 1973 and have been renovated multiple times throughout the years upon tenant turnover. The site improvements also include paved sidewalks, loading docks, parking and accessways with landscaping in small areas and generally along the site perimeter. The project will demolish all of the existing buildings and site improvements.

Native and non-native trees and ornamental landscaping are located along the frontage of the property, as well as the northern, western, and southern property boundaries. The project proposes to remove all the existing trees, shrubs and groundcovers on the project site.

The project area consists primarily of commercial and industrial land uses surrounding the project site. A PG&E overhead transmission line spans across the southwestern property line, held up by transmission towers, one of which is located within the property line. Highway 92 is located just north of the site. The nearest residential uses are located approximately ½ mile to the east. Buildings surrounding the site are similar in height and scale to the existing building on the project site. Buildings to the east are similar in height and scale to the proposed buildings. The Hayward Executive Airport is located approximately 1-3/4 miles northeast of the site.

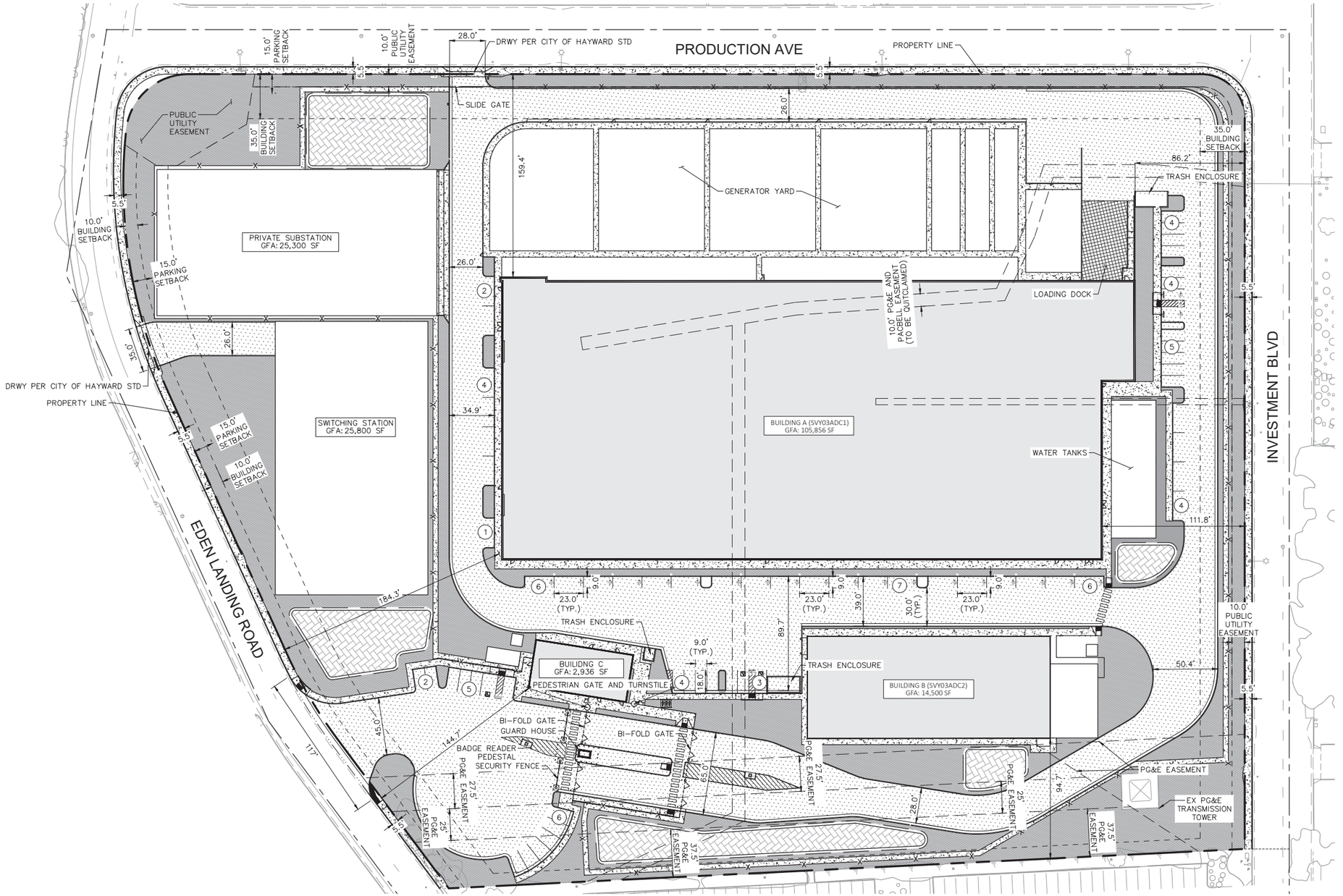
2.2.2 General Site Arrangement and Layout

The 28 emergency backup generators (27 for the SVY03ADC1 and one for the SVY03ADC2) will be located at the site in two locations. The 26, 2.75 MW generators and the 1 MW single house generator that serve the SVY03ADC1 will be located in a generator yard on the west side of the SVY03ADC1. The single 1.6 MW generator that serves the SVY03ADC2 will be located on the south side of the SVY03ADC2. Figure 2.2-4 shows the General Arrangement and Site Layout of the SVY03A Campus and includes the location of all the proposed generators.

As shown on Figure 2.2-5, 24 of the 2.75 MW generators will be installed in a stacked configuration. Each stacked pair of generators will be supported by an 11,000-gallon diesel fuel tank at the base of the stacking structure with a 500-gallon diesel fuel tank installed within the upper generator package. Each stacked pair of generators will be supported by a main diesel exhaust fluid (DEF) tank installed below the lower generator. The generators packages and tanks will be enclosed in acoustical enclosures. Two of the 2.75 MW generators that support the SVY03ADC1 will not be stacked and will be supported by independent fuel and DEF tanks inside each generator enclosure. The single 1.6 MW generator supporting the SVY03ADC2 will include a 5000-gallon diesel fuel tank

[1] The square footage of the nine existing buildings are 29,800 sf, 22,927 sf, 13,552 sf, 22,804 sf, 15,400 sf, 16,974 sf, 17,136 sf, 16,908 sf, and 11,970 sf.

and a DEF tank inside its acoustical enclosure. The total diesel fuel capacity for the site is 427,000 gallons.



LEGEND

- PROPERTY LINE
- RIGHT OF WAY LINE
- BUILDING SETBACK LINE
- PROPOSED CHAIN LINK FENCE
- FLOW LINE
- HEAVY DUTY ASPHALT PAVING
- CONCRETE SIDEWALK
- HEAVY DUTY CONCRETE FOR LOADING DOCK
- LANDSCAPE/PLANTER AREA
- BIORETENTION AREA
- (X) PARKING COUNT

PARKING SUMMARY

REQUIRED PARKING - BUILDING A		
USE	REQUIRED	PROVIDED
DATA CENTER 310,600 SF	1 STALL PER 250 SF (1243 STALLS)	44
ADA	23	2 TOTAL (1 VAN)

REQUIRED PARKING - BUILDING B		
USE	REQUIRED	PROVIDED
OFFICE 15,400 SF	1 STALL PER 250 SF (62 STALLS)	6
ADA	3	2 TOTAL

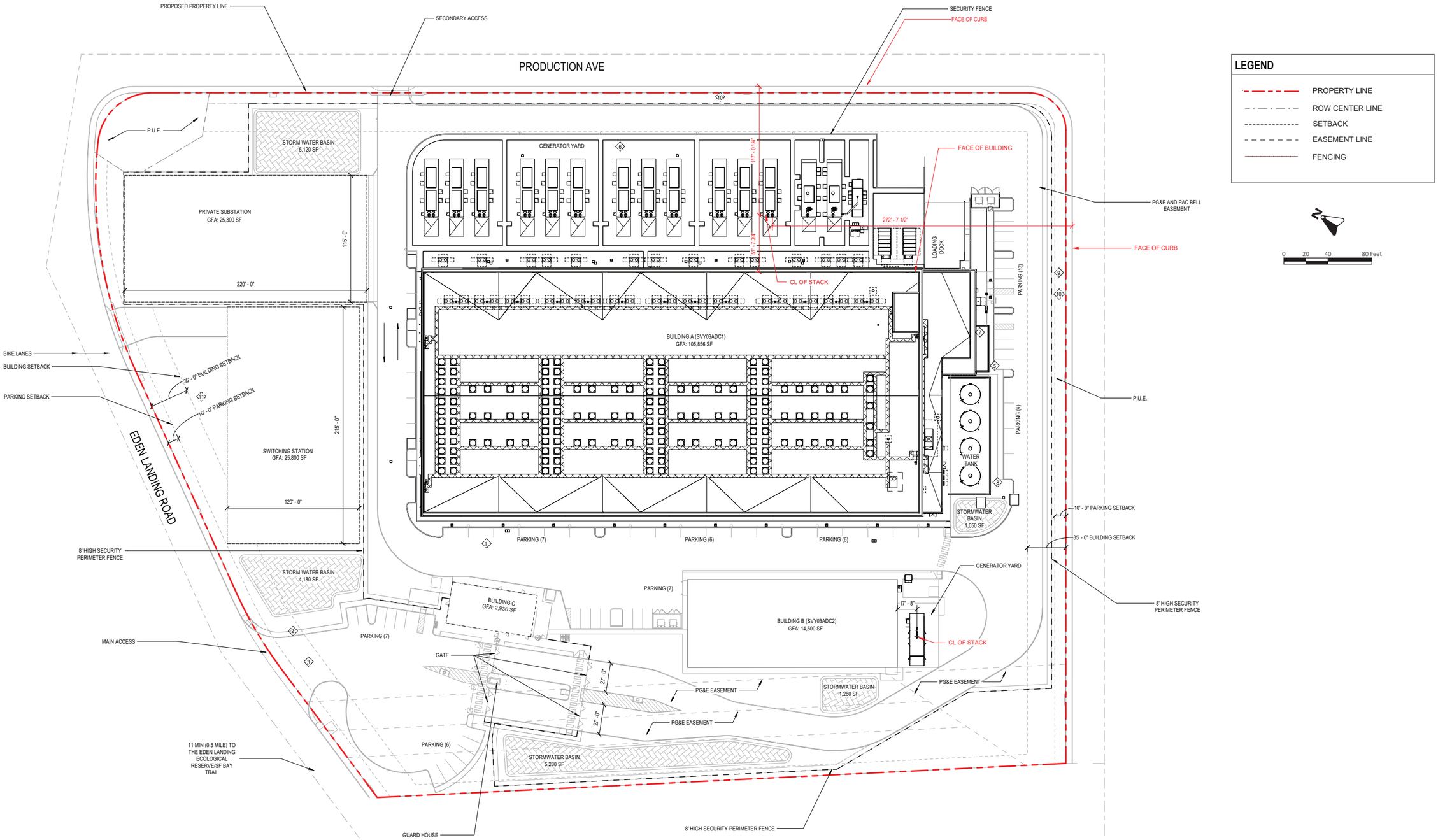
REQUIRED PARKING - BUILDING C		
USE	REQUIRED	PROVIDED
OFFICE 15,400 SF	1 STALL PER 250 SF (12 STALLS)	13
ADA	1	1 VAN

CAL GREEN PARKING REQUIREMENTS (OVERALL CAMPUS)		
STALL TYPE	REQUIRED	PROVIDED
EV ADA STALL	2 TOTAL (1 VAN)	2 TOTAL (1 VAN)
EV STALL	13	16
EVCS STALL	3	3
SHORT TERM BIKE PARKING	2	2
LONG TERM BIKE PARKING	3	3

OVERALL CAMPUS PARKING SUMMARY		
STALL TYPE	REQUIRED	PROVIDED
STANDARD PARKING STALL (9'X18')	1294	58
ADA PARKING	23	5 TOTAL (2 VAN)
TOTAL	1317	63

Source: HKS, August 14, 2023.

PROJECT SITE PLAN | FIGURE 2.2-4



Source: HKS, August 14, 2023.

EMERGENCY GENERATOR LOCATIONS AND LAYOUT | FIGURE 2.2-5

2.2.3 Generating Capacity

2.2.3.1 *Overview*

In order to determine the generating capacity of the SVY03ABGF, it is important to consider and incorporate the following critical and determinative facts.

1. The SVY03ABGF uses internal combustion engines and not turbines.
2. The SVY03ABGF is controlled exclusively by the SVY03ADC1 and SVY03ADC2 through software technology and electronic devices.
3. The SVY03ABGF has been designed to deliver up to 76.6 MW during an emergency on the hottest design day.
4. The SVY03ABGF includes two completely redundant generators.
6. The SVY03ABGF will only be operated for maintenance, testing and during emergency utility power outages.
7. The SVY03ABGF will only operate at a load equal to the demand by the SVY03A Campus during an emergency utility outage.
8. The SVY03ABGF is not interconnected to the transmission grid.

2.2.3.2 *Generating Capacity and PUE*

Based on the methodology adopted by the Commission's Final Decisions Granting SPPEs for the last six Data Center Backup Generating Facilities, the maximum generating capacity of the SVY03ABGF is determined by the maximum of capacity of the load being served.

The design demand of the SVY03A Campus, which the SVY03ABGF has been designed to reliably supply with redundant components during an emergency, is based on the maximum critical IT load and maximum mechanical cooling electrical load occurring during the hottest hour in the last 20 years. Such conditions are possible but extremely unlikely to ever occur. The combined SVY03ADC1 and SVY03ADC2 total load on that worst-case day will be 76.6 MW.

Power Usage Effectiveness, or PUE, is a metric used to compare the efficiency of facilities that house computer servers. PUE is defined as the ratio of total facility energy use to Information Technology (IT) (i.e., server) power draw (e.g., PUE = Total Facility Source Energy/ IT Source Energy). For example, a PUE of two (2), means that the data center or laboratory must draw two (2) watts of electricity for every one (1) watt of power consumed by the IT/server equipment. It is equal to the total energy consumption of a data center (for all fuels) divided by the energy consumption used for the IT equipment. The ideal PUE is one (1) where all power drawn by the facility goes to the IT infrastructure. For a worst case day, where the maximum critical IT load and maximum mechanical cooling electrical load occur during the hottest hour, the peak PUE for the SVY03A Campus would be 1.28. Such conditions to cause this PUE are possible but extremely unlikely to ever occur. The average PUE for the SVY03A Campus would be 1.15. Based on industry surveys, the average PUE for

data centers is 1.67, although newly constructed data centers typically have PUEs ranging from 1.1 to 1.4.[2]

2.2.4 Backup Electrical System Design

2.2.4.1 *Overview*

To place the role of the SVY03ABGF into context, the following information about the overall SVY03A Campus design is provided. The design objective of the backup electrical system is to provide sufficient equipment and redundancy to ensure that the servers housed in the SVY03A Campus buildings will never be without electricity to support critical loads. The critical loads include the load to support the building operation in addition to the electricity consumed by the servers themselves. The largest of these non-server serving building loads is to provide cooling for the server rooms.

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

Each electrical system will consist of an Uninterruptible Power Supply (UPS) system that will be supported by batteries and a means for automatic switching between UPS and normal power. The UPS system that will be deployed at the SVY03A Campus to provide backup to the IT loads will consist of two power shelves within each individual rack. Each rack power shelf will consist of 6 N+1 3kW automatic transfer switching power supply units (ATSPSUs) and lithium ion battery backup units (BBUs). The BBUs are designed to deliver 15kW of power.

The UPS systems provided for all non-IT loads will consist of a 100kW rated UPS system provided with the house power service for emergency backup to the fire suppression system and electrical and mechanical controls in office spaces, and 20kW rated UPS systems provided with each electrical lineup for emergency backup to the electrical and mechanical controls for IT, electrical, and mechanical rooms. For the 1 MW house power generator, one 100kW UPS systems is provided. A similar 20kW rated UPS system will be deployed for the Site Security building.

2.2.4.2 *UPS System and Batteries*

The UPS System and Batteries are part of the SVY03A Campus and are not part of the SVY03ABGF. The load will be automatically transferred to the bypass line without interruption in the event of an internal UPS malfunction. The UPS will operate in the following modes:

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

- Normal Conditions (Double Conversion, IGBT): Load is supplied with power flowing from the normal power input terminals, through the rectifier-charger and inverter, with the battery connected in parallel with the rectifier-charger output.
- Normal Conditions (Delta conversion): The output inverter and input (Delta) converter shall operate in an on-line manner to continuously regulate power to the critical load. The input power converter and output inverter shall be capable of full battery recharge while simultaneously providing regulated power to the load for all line and load conditions within the range of the UPS specifications.
- Abnormal Supply Conditions: If normal supply deviates from specified and adjustable voltage, voltage waveform, or frequency limits, the battery supplies energy to maintain constant, regulated inverter power output to the load without switching or disturbance.
- Power Failure: If normal power fails, energy supplied by the battery through the inverter continues to supply-regulated power to the load without switching or disturbance.

When power is restored at the normal supply terminals of the system, controls shall automatically synchronize the inverter with the external source before transferring the load. The rectifier-charger shall supply power to the load through the inverter and simultaneously recharge the battery.
If the battery becomes discharged and normal supply is available, the rectifier-charger shall charge the battery. The rectifier-charger shall automatically shift to float-charge mode on reaching full charge.

If any element of the UPS system fails and power is available at the normal supply terminals of the system, the static bypass transfer switch shall switch the load to the normal ac supply circuit without disturbance or interruption.

Should overloads persist past the time limitations, the automatic static transfer switch shall switch the load to the bypass output of the UPS. When the fault has cleared, the static bypass transfer switch shall return the load to the UPS system.

If the battery is disconnected, the UPS shall supply power to the load from the normal supply with no degradation of its regulation of voltage and frequency of the output bus.

2.2.4.3 *Batteries*

Similarly, the batteries are not part of the SVY03ABGF and are described here for informational purposes only. The batteries will be lithium-ion and supplied by Samsung, or Toshiba. The batteries are provided in a one string configuration within a cabinet with each UPS. Batteries will have a minimum design life of approximately 12 years in float applications at 64.4-82.4 degrees F. Lithium ion batteries report cell properties to the UPS, which is monitored by EPMS for statuses and alarming.

The batteries will be configured in banks with matching standalone batteries with the following characteristics:

a. Each battery bank will provide a minimum of 12 minutes of backup at 100% full load UPS current, @ 64-82 deg F, 3 end volts per cell, beginning of life.

b. Internal cabinet temperature sensor to be wired back to the UPS module.

c. Battery type is Lithium Manganese Oxide / Nickel Manganese Cobalt Oxide mix (LMO/NMC)

2.2.5 Generator System Description

Each of the 26, 2.75 MW generators for the SVY03ADC1 will be Caterpillar Model 3516E (Cat 3516E) standby emergency diesel fired generators equipped with Selective Catalytic Reduction (SCR) equipment and diesel particulate filters (DPF) to comply with Tier 4 emissions standards. The maximum peak generating capacity of each generator is 2.75 MW for standby applications (short duration operation). Under normal operation, due to the block redundant configuration, the maximum load on each generator is designed to be less than 100 percent of the peak capacity.

The 1.6 MW generator for the SVY03ADC2 will be Caterpillar Model 3512 (Cat 3512) standby emergency diesel fired generators equipped with Selective Catalytic Reduction (SCR) equipment and diesel particulate filters (DPF) to comply with Tier 4 emissions standards. The maximum peak generating capacity of this generator is 1.75 MW, derated to 1.6 MW for standby applications (short duration operation).

The 1 MW generator for the SVY03ADC1 will be Caterpillar Model C32 (Cat C32) standby emergency diesel fired generators equipped with Selective Catalytic Reduction (SCR) equipment and diesel particulate filters (DPF) to comply with Tier 4 emissions standards. The maximum peak generating capacity of this generator is 1 MW for standby applications (short duration operation).

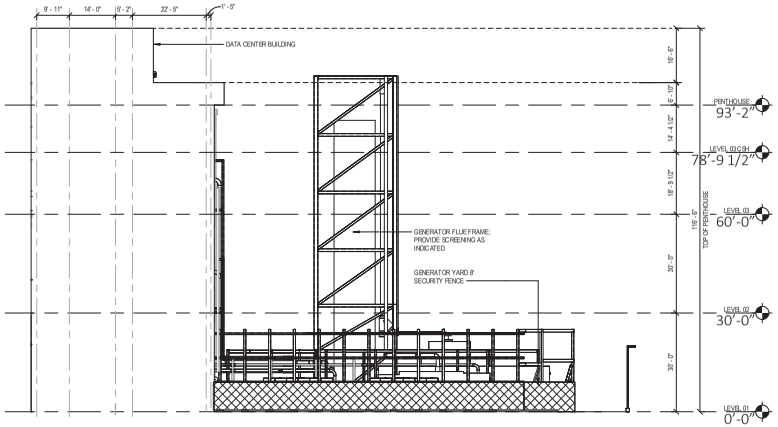
Each individual generator will be provided with its own packaging system. Within that package, the prime mover and alternator will be automatically turned on and off by a utility-generator PLC transfer controller located in the 480-volt main switchboard located within the SVY03ADC1 and the SVY03ADC2. Each generator will be controlled by a separate, independent transfer controller. The generator will be turned on if the electrical utility power becomes unavailable and will be turned off after utility power has been restored and the transfer controller has returned the utility to the active source of power serving the computer and mechanical loads within the SVY03ADC1 and SVY03ADC2.

For the SVY03ADC1, each stacked pair of Cat 3516E generators will have an integrated dedicated base 11,000 gallon fuel tank and urea tank within the generator enclosure. The upper generator will have a 500 gallon day fuel tank. The upper generators will be supported by a structural steel platform and the lower generators will be supported by concrete pads. The generators enclosures are approximately 13 feet wide, 65-1/2 feet long and the full stacked height is 31-1/2 feet high as

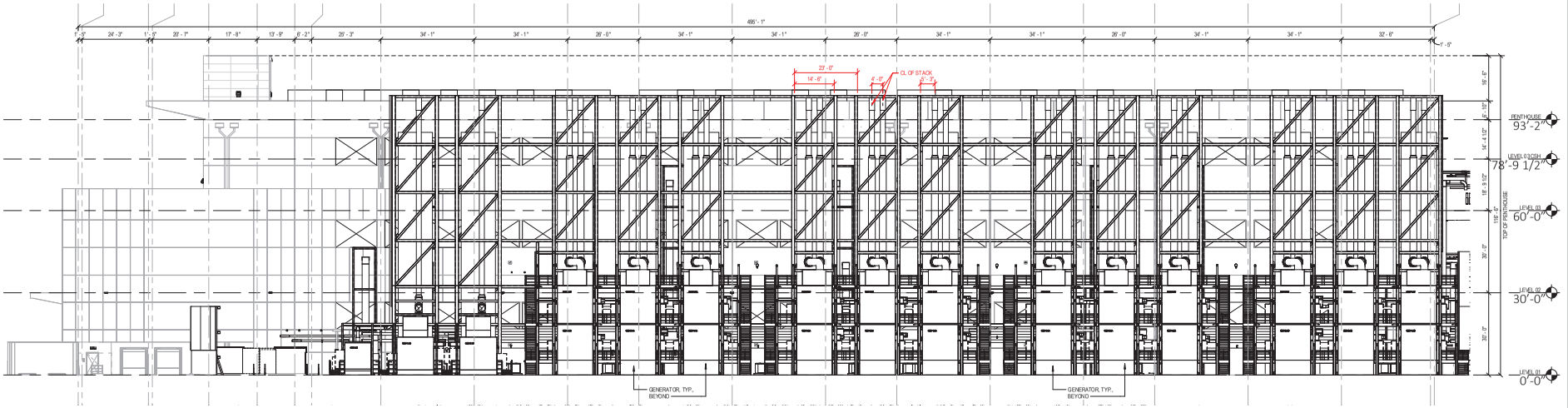
shown on Figure 2.2-6. Each generator will have a stack height of approximately 90 feet above grade. The generators at both levels will have approximately 10 feet of clearance between adjacent generators. Two of the Cat 3516E generators will be at grade as shown on Figures 2.2-5 and 2.2-6.

The SVY03ADC1 will also be supported by the smaller Cat C32 generator installed at grade and adjacent to the two Cat 3516E unstacked generators. The Cat C32 enclosure will be approximately 5.5 feet wide, 13.7 feet long, and 7.1 feet high. The generator will have a stack height of approximately 90 feet above grade.

The SVY03ADC2 will be supported solely by the 1.6 MW Cat 3512 generator and located as shown on Figure 2.2-5 above. The Cat C3512 enclosure will be 14.5 feet wide, 47 feet long, and 20 feet high. The generator will have a stack height of approximately 26 feet above grade.



GENERATOR YARD SCREEN WALL ELEVATION - WEST



GENERATOR YARD SCREEN WALL ELEVATION - SOUTH

Source: HKS, August 9, 2023.

EMERGENCY GENERATOR STACKED LAYOUT | FIGURE 2.2-6

Each of the 2.75 MW generators for the SVY03ADC1 will be connected to an individual lineup consisting of a Main Switch Board, where two of the generators/lineups are redundant. Each non-redundant lineup feeds a maximum of 1808 kW of critical IT load. All 26 generators and lineups are interconnected at the Main Switch Board level for the SVY03ADC1, therefore should any one lineup fail, either of the two redundant lineups will have enough capacity to completely pick up the dropped load. During a utility outage, all non-redundant generators will start and be connected to their dedicated loads. If no more than 2 of the generator systems fail during the utility outage, the total maximum load of approximately 76.6 MW will be supported by the generators and will only be running at about 80% of the full capacity of the generators.

2.2.6 Fuel System

The backup generators will use renewable diesel as its primary fuel or ultra-low sulfur diesel as secondary fuel (<15 parts per million sulfur by weight). Approximately 5,200 gallons of fuel are required for 24-hour operation of each generator. The generators would have a combined diesel fuel storage capacity of approximately 237,500 gallons, which is sufficient to provide more than 24 hours of emergency generation at full electrical worst-case demand of the SVY03A Campus.

2.2.7 Hazardous Materials Management

The SVY03ABGF will prepare a Spill Prevention, Control and Countermeasure Plan (SPCC) to address the storage, use and delivery of diesel fuel for the generators.

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

Diesel fuel will be delivered on an as-needed basis in a compartmentalized tanker truck. The tanker truck parks at the gated entrances to the generator yard for re-fueling.

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

To further minimize the potential for diesel fuel to come into contact with stormwater, to the extent feasible, fueling operations will be scheduled at times when storm events are improbable. Warning signs and/or wheel chocks will be used in the loading and/or unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed transfer lines. An

emergency pump shut-off will be utilized if a pump hose breaks while fueling the tanks. Tanker truck loading and unloading procedures will be available at the offices.

DEF, which contains urea, is used as part of the diesel engine combustion process to meet the emissions requirements. The DEF will be stored in the tanks located within the generator enclosures. These tanks can be filled in place from other drums, totes, or bulk tanker truck at the tank top.

2.2.8 SVY03ABGF Facility Operation

The backup generators will be run for short periods for testing and maintenance purposes and otherwise will not operate unless there is a disturbance or interruption of the utility supply. BAAQMD's Authority to Construct and the California Air Resources Board's Airborne Toxic Control Measures (ATCM) limits each engine to no more than 50 hours annually for reliability purposes (i.e., testing and maintenance). Please see Table 2.2-1 for a description of the testing and maintenance frequencies and loading proposed for the generators that comprise the SVY03ABGF.

Table 2.2-1: Generator Planned Maintenance and Testing Events

Event	Frequency	Maximum Duration (min)	Maximum Number of Generators Tested Concurrently	Maximum Number of Generators Tested per Day	Typical Load Range
Readiness Testing	Monthly	30	1	10	40%
Generator Maintenance and Testing	Annual	120	1	8	25% for 30 min 50% for 30 min 100% for 1 hour

2.3 SVY03A Campus Facilities Description

2.3.1 Overview

As described in Section 1.2, the Commission SPPE's determination is limited solely to the SVY03ABGF. However, in order for the Commission to inform the decision-makers of the potential environmental effects of the SVY03ABGF, in combination with the SVY03ADC1, the SVY03ADC2 and related facilities, STACK has included a complete description of the SVY03A Campus. A complete description of the SVY03ABGF is included in Section 2.1 Overview of Master Plan Development and Section 2.2 Generating Facility Description. The SVY03A Campus will include the following components:

- SVY03A Data Center 1 Building;

- SVY03A Data Center 2 Building;
- Security Building;
- Project Substation, PG&E Switching Station and Transmission Line;
- Site Access and Parking;
- Three Water Storage Tanks;
- Stormwater Basin and Stormwater Controls;
- Associated Utility Interconnections; and
- Landscaping

Each component is described in detail below.

2.3.2 SVY03ADC1 Building

2.3.2.1 *Size, Height, and Setbacks*

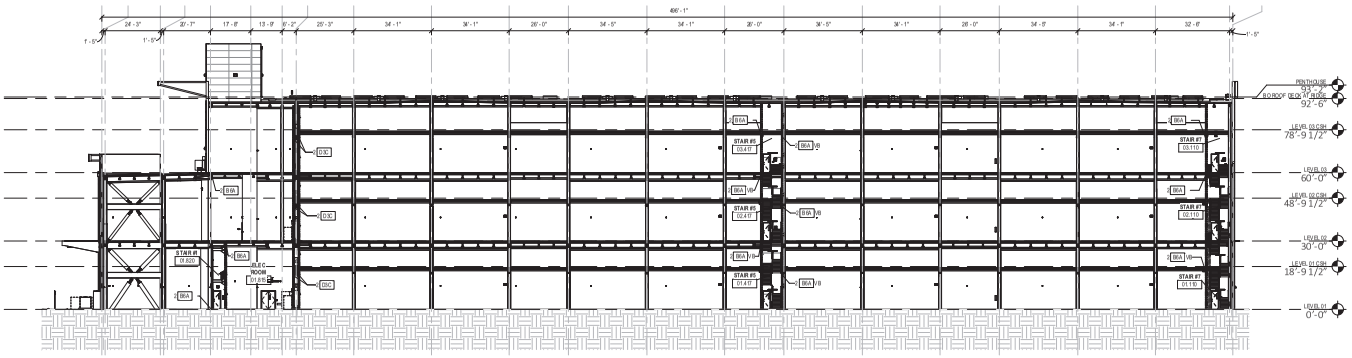
The SVY03ADC1 building will be a three-story building encompassing approximately 318,700 square feet. The data center building will house computer servers for private clients in a secure and environmentally controlled structure and would be designed to provide 66 megawatts (MW) of power to information technology (Critical IT) equipment. A General Arrangement and Site Layout of the SVY03ADC1 Building is shown on Figure 2.2-4. Figure 2.3-1 shows SVY03ADC1 Elevations.

The structure will be architecturally treated to fit the surrounding context of the site. Mechanical equipment for buildings cooling will be housed inside the building along with exhaust baffles for exiting hot-air. Electrical and backup battery equipment rooms will be housed inside the building. The data center is being designed with an average rack power rating of 8 kW.

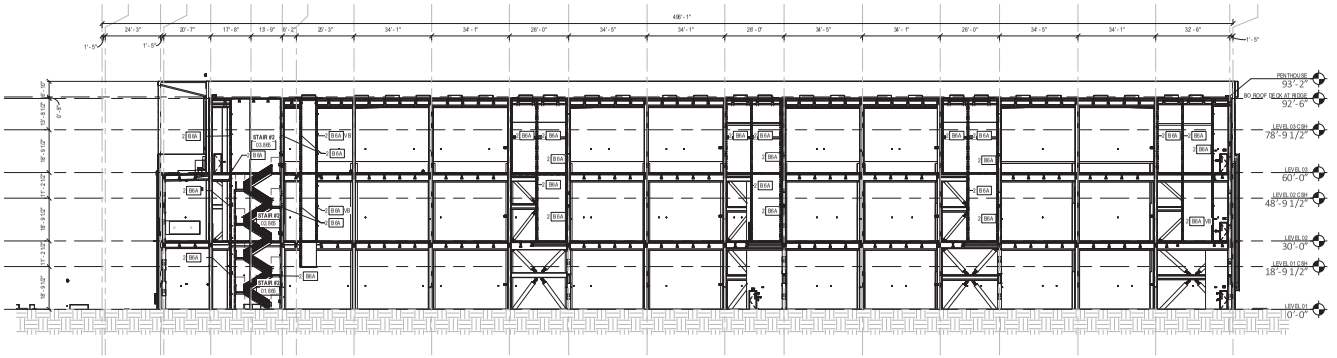
The data center building is composed of admin, data hall, electrical and mechanical support spaces and loading dock masses. The maximum building height would be approximately 94 feet measured to the top of the main structure, 100 feet measured to the top of the building parapet, and 116.5 feet measured to the top of the small penthouse.

Floor plans of each level of SVY03ADC1 are shown in Figure 2.3-2, Figure 2.3-3, and Figure 2.3-4. The roof level plan is shown on Figure 2.3-5.

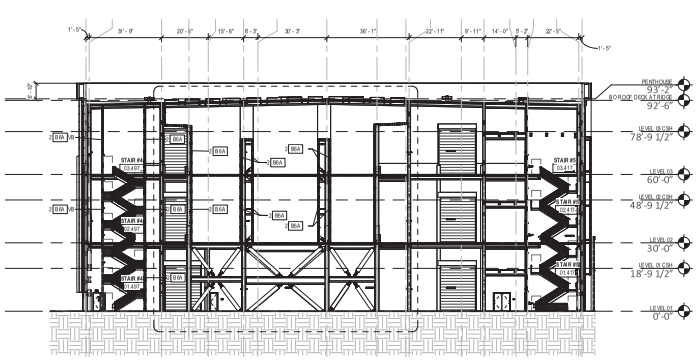
The SVY03ADC1 data center building is located a minimum 20 feet from the property line along Production Avenue and a minimum 10 feet from the property lines along Eden Landing Road and Investment Boulevard. SVY03ADC2 and SCY03ABGF is located southwest and west of building SVY03ADC1 and will maintain the minimum setback requirements as the main SCY03ADC1 building.



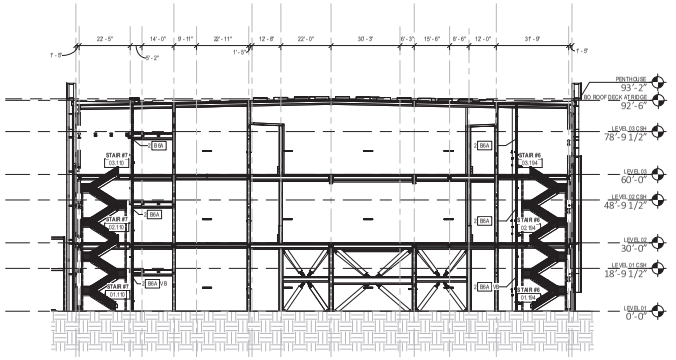
OVERALL BUILDING SECTION - E-W - ELECTRICAL ROOMS



OVERALL BUILDING SECTION - E-W - DATA HALLS



OVERALL BUILDING SECTION - N-S - EXIT CORRIDOR

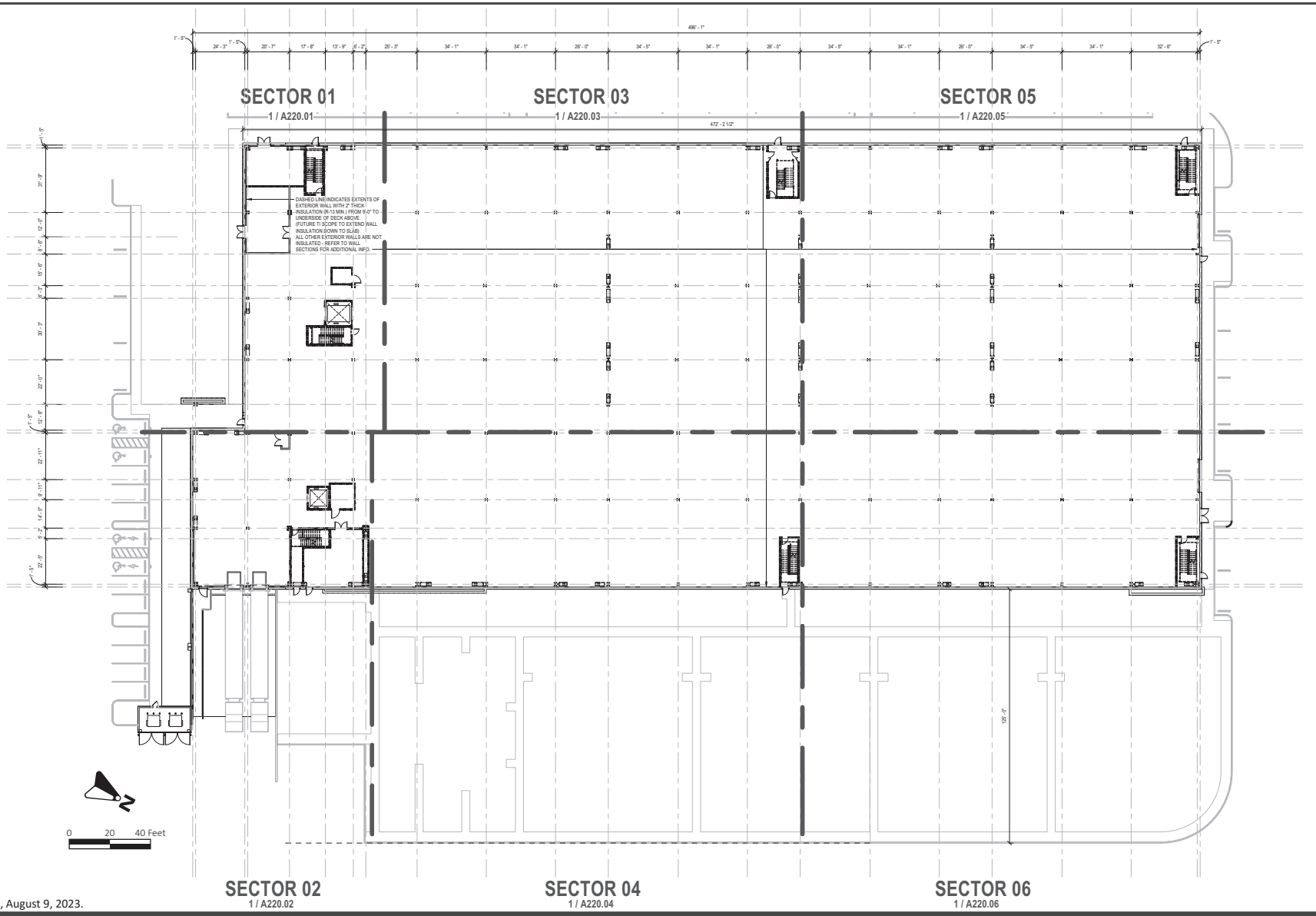


OVERALL BUILDING SECTION - N-S

Source: HKS, August 9, 2023.

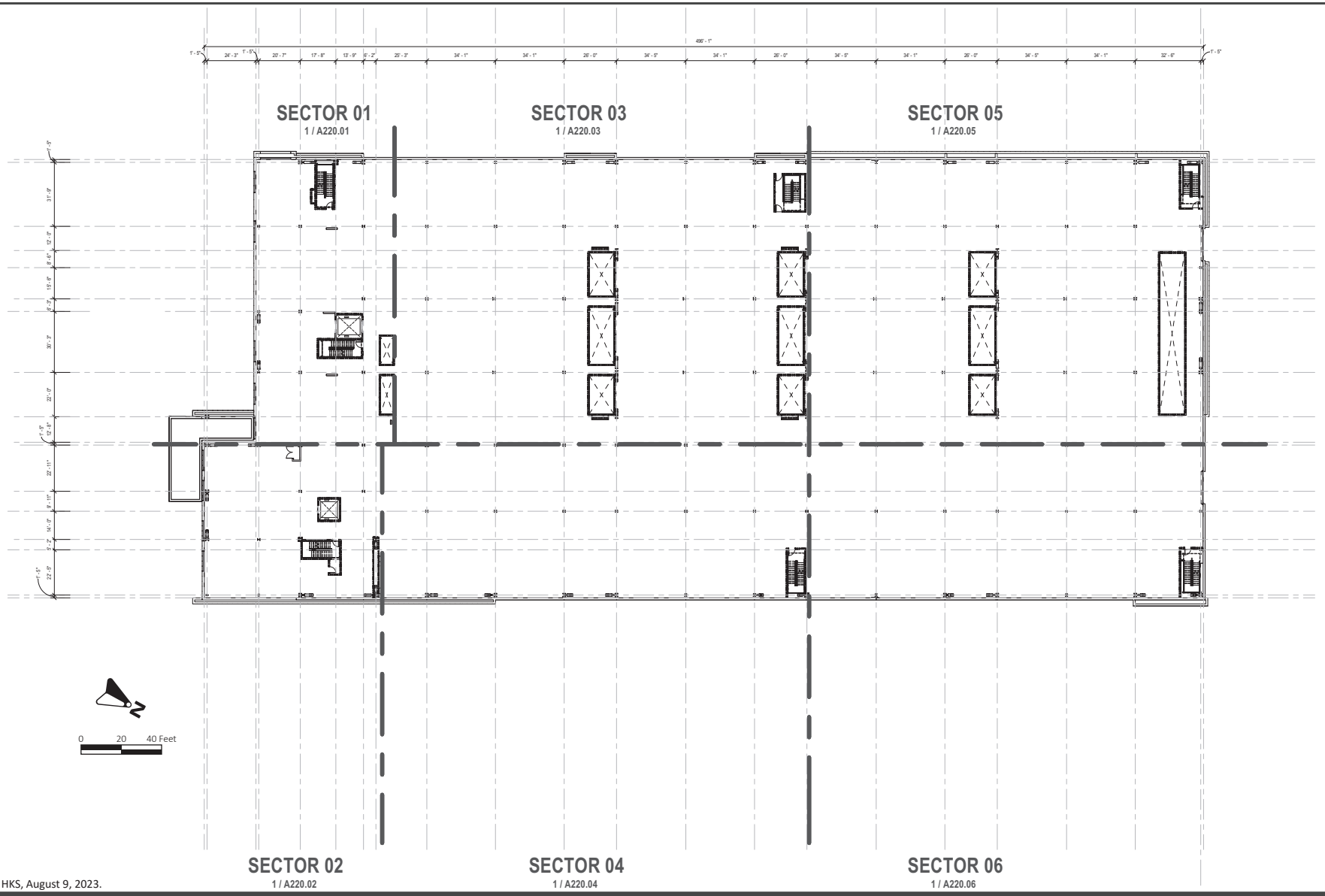
SVY03ADC1 BUILDING ELEVATIONS

FIGURE 2.3-1



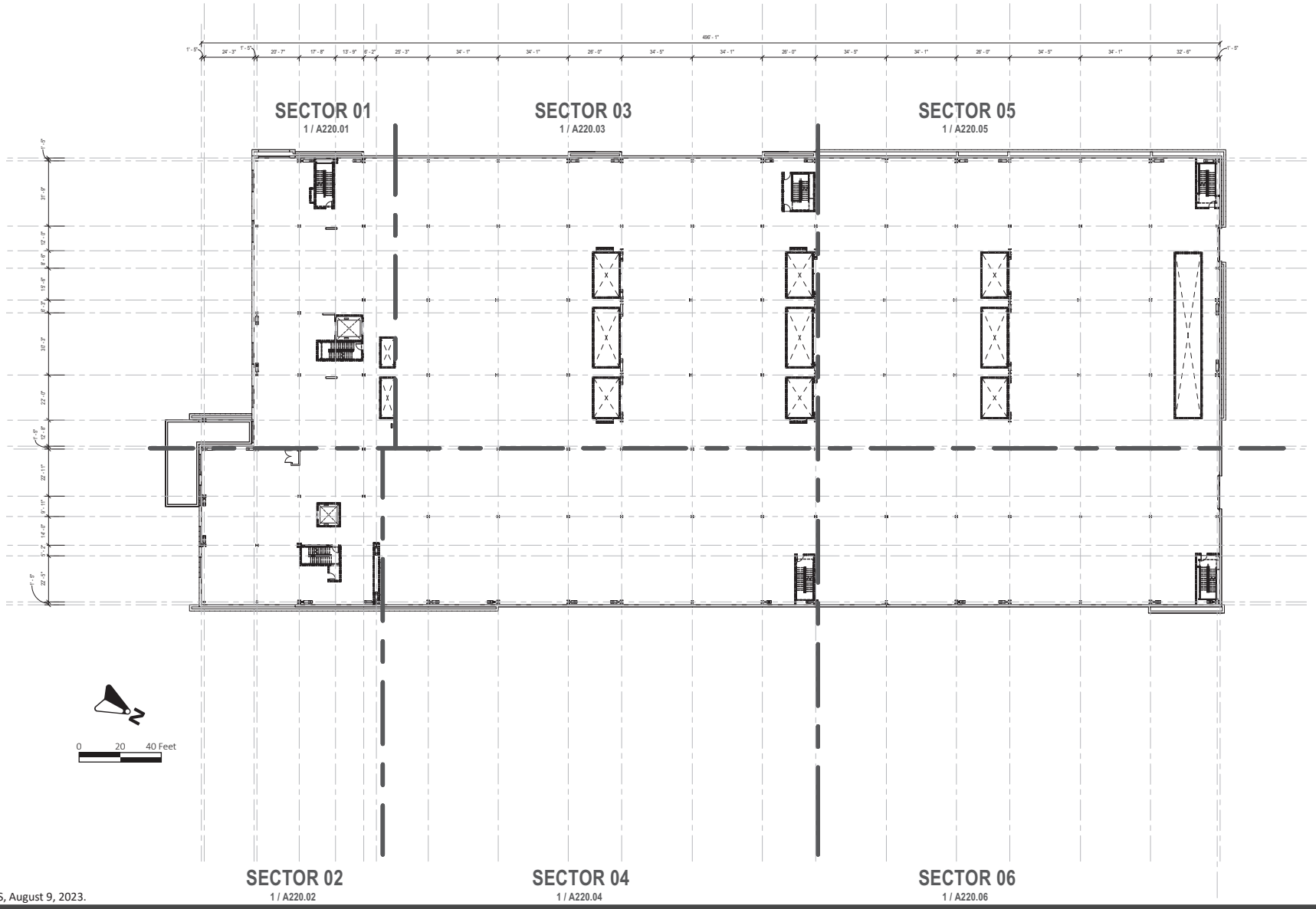
Source: HKS, August 9, 2023.

SVY03ADC1 LEVEL ONE BUILDING FLOOR PLAN | FIGURE 2.3-2



Source: HKS, August 9, 2023.

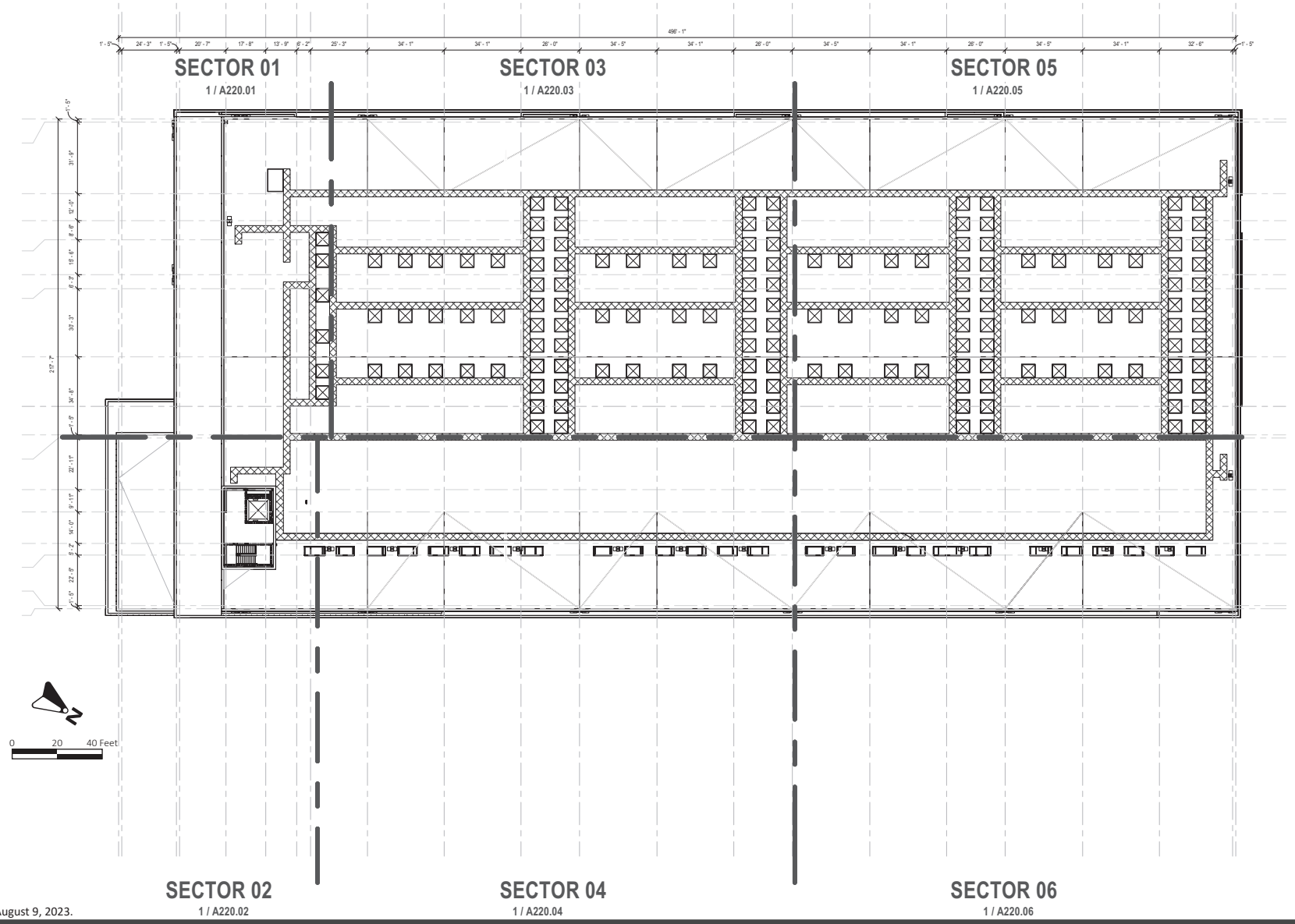
SVY03ADC1 LEVEL TWO BUILDING FLOOR PLAN | FIGURE 2.3-3



Source: HKS, August 9, 2023.

SVY03ADC1 LEVEL THREE BUILDING FLOOR PLAN

FIGURE 2.3-4



Source: HKS, August 9, 2023.

SVY03ADC1 ROOFTOP BUILDING PLAN

FIGURE 2.3-5

2.3.2.2 *Building Cooling System*

Data Hall Cooling

Fan wall-style Data hall Air Handling Units (DAHUs) are the sole cooling source for the IT spaces in the building. The DAHUs are installed in dedicated mechanical galleries along opposing sides of the IT space, and they draw in outside air through sidewall louvers at the building's perimeter. These DAHUs are capable of supplying up to 100% outdoor air economization for data center cooling and, when necessary, the DAHUs use direct evaporative media to lower the temperature of the outside air down to the set-point determined by the control system. The mechanical galleries are separated from the IT space by two interstitial "common supply air headers" running the length of the mechanical gallery and IT space.

This SVY03ADC1 uses a "flooded room" cooling design, meaning that it uses no ductwork or raised flooring systems to direct the cooling air to the IT racks' air intakes. Instead, all the DAHUs in a given mechanical gallery discharge their cooling air into the adjacent common supply air header, and, in turn, the common supply air header allows a "flood" of cooling air into the IT space through a number of supply air dampers in the wall separating the supply air header from the IT space. These supply air dampers include both controlled, modulating sections and fixed, open sections which allows the cooling system to modulate cooling supplied in different areas while still maintaining a certain minimum airflow in all areas.

Data hall pressurization requirements are maintained using rooftop exhaust fans (EFs). These fans modulate in unison to maintain space pressure throughout the control area uniformly. During part load conditions, fans stage off as necessary to maintain minimum fan airflow requirements.

Electrical Room Cooling

The SVY03ADC1 utilizes multiple ductless split system DX heat pumps in the electrical room. The heat gain in these rooms is minimal compared to the data center load, as there are no large transformers in the electrical rooms. This design requires three heat pumps in typical electrical rooms, and two units in catcher rooms.

Office Cooling

The data center office area utilizes a variable air volume (VAV) system . The VAV system is broken up into two separate systems, each with multiple VAV boxes. This provides cooling redundancy for the house electrical room. The ventilation requirements for the space are met via applicable ventilation codes and is distributed with the central air handling system. The central air handlers have outside air intakes integral with the equipment.

2.3.3 SVY03ADC2 Building

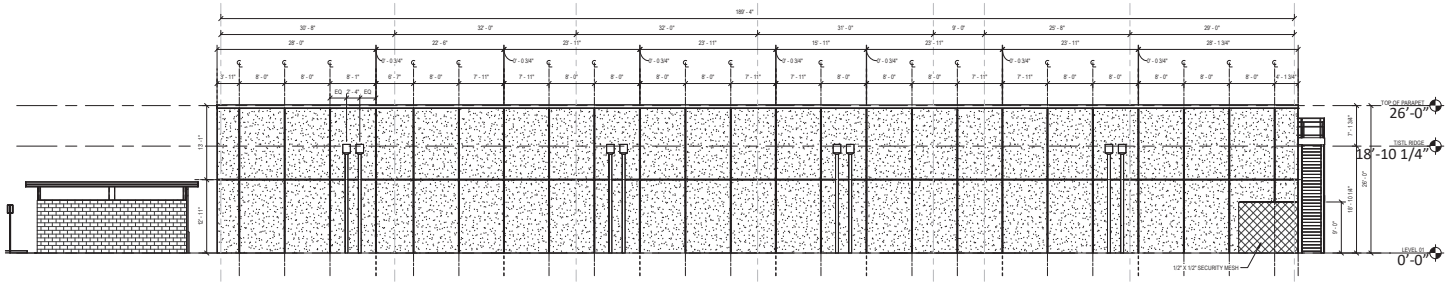
2.3.3.1 *Size, Height, and Setbacks*

The SVY03ADC2 building will be a one-story data center building encompassing approximately 14,500 square feet. The height of the SVY03ADC2 will be a maximum of 21 feet above grade. The SVY03ADC2 will house computer servers for private clients in a secure and environmentally controlled structure and would be designed to provide 1.6megawatts (MW) of power to information technology (Critical IT) equipment. A General Arrangement and Site Layout of the SVY03A Building is shown on Figure 2.2-4. Figure 2.3-6 shows SVY03ADC2 Elevations.

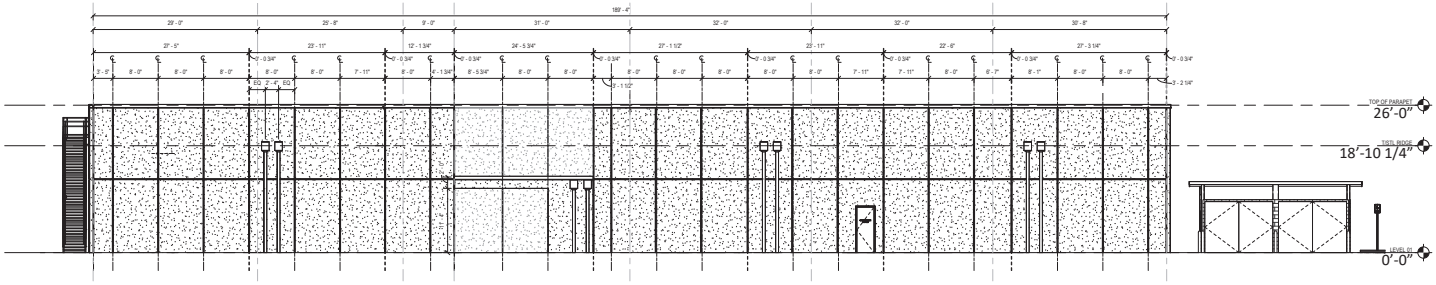
The purpose of SVY03ADC2 is a separate data center solution typically located within 1,000 yards of an existing regular data center and is designed to house tape media that provides a long-term data storage solution. The SVY03ADC2 utilizes magnetic tape media which requires environmental conditions such as temperature, humidity and particulate-free (ISO 14644-1 Class B for cleanliness levels) to be maintained in a narrow band (16-25C and 20-50%RH) compared to the values maintained at a typical data center (10-35C, 8-80% RH). The SVY03ADC2 is tied to SVY03ADC1 data center through redundant bulk fibers.

The structure will be architecturally treated to fit the surrounding context of the site. Mechanical equipment for buildings cooling will be housed on the roof of the building. Electrical and backup battery equipment rooms will be housed inside the building. The SVY03ADC2 would be designed with an average rack power rating of 5 kW.

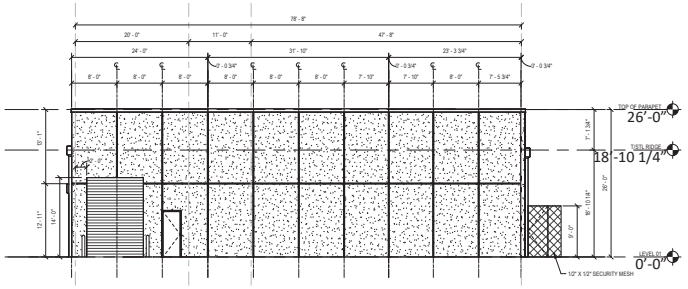
The roofing plan for the SVY03ADC2 is shown on Figure 2.3-7.



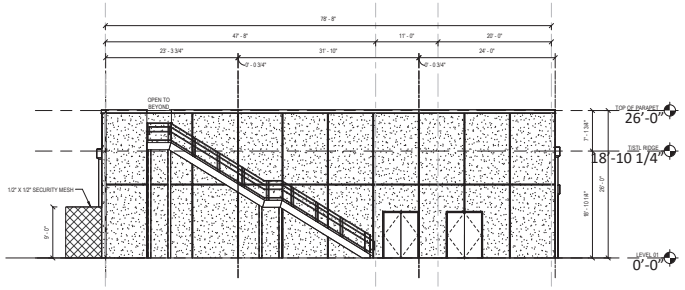
ARCHITECTURAL CS SOUTH ELEVATION



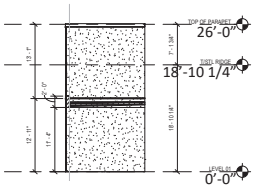
ARCHITECTURAL CS NORTH ELEVATION



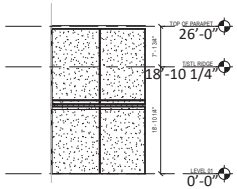
ARCHITECTURAL CS WEST ELEVATION



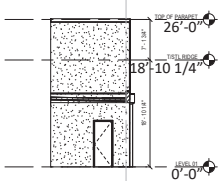
ARCHITECTURAL CS EAST ELEVATION



ENTRY VESTIBULE WEST ELEVATION



ENTRY VESTIBULE NORTH ELEVATION

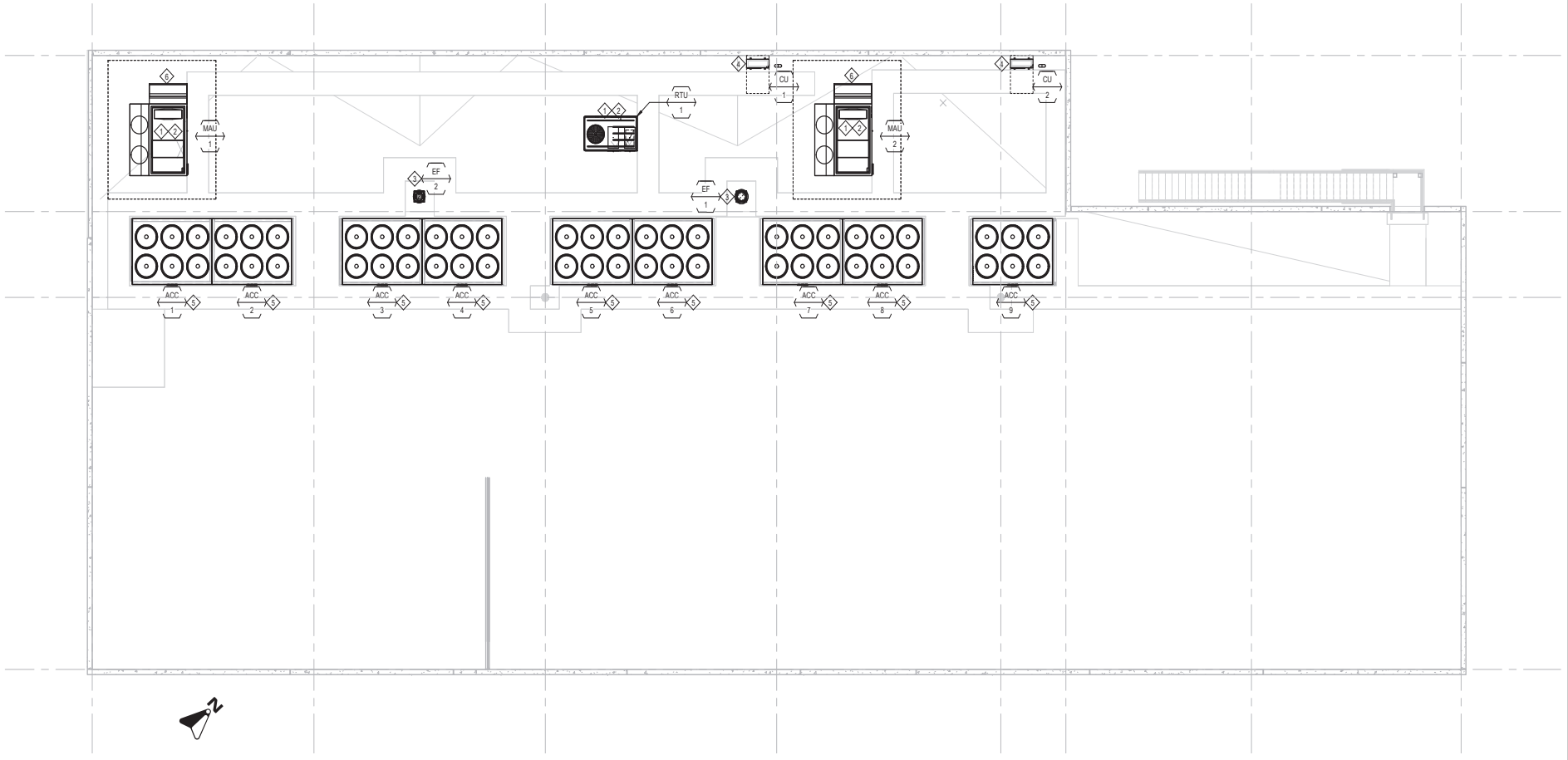


ENTRY VESTIBULE EAST ELEVATION

Source: HKS, September 11, 2023.

SVY03ADC2 BUILDING ELEVATIONS

FIGURE 2.3-6



Source: HKS, February 3, 2023.

SVY03ADC2 ROOFTOP BUILDING PLAN | FIGURE 2.3-7

2.3.3.2 *Cooling*

Data Hall Cooling

SVY03ADC2is cooled by direct expansion Computer Room Air Conditioning (CRAC) units. The CRAC units are located in a gallery adjacent to the computer room. The system utilizes flooded room airflow design. The CRAC gallery acts as a supply plenum and airflow is discharged to the computer room cold aisles via row supply dampers on the CRAC gallery wall. Server heat is recirculated back to the CRAC units through the hot aisle containment and via return air plenum above the dropped ceiling. Heat is rejected to the ambient air via air cooled condensers located on the roof. When ambient air conditions are below a threshold, the system uses pumped refrigerant economizer feature instead of compressors to reduce energy consumption. Makeup Air Units (MAU) provide ventilation and space pressurization in the computer room.

Electrical Room Cooling

Electrical Room is cooled via two ductless split system DX heat pumps. Heat is rejected to the ambient air via outdoor condensers on the roof.

Admin Area Cooling

Admin area is conditioned via Rooftop Unit. Supply air is ducted to individual spaces. Return air is ducted back to the unit. The unit also has outside air intake for ventilation.

2.3.4 Project Substation, PG&E Switchyard and Transmission Line

The SVY03A Campus would construct a new 75 MVA (mega volt-ampere) electrical substation along the western boundary of the site (Project Substation). The two-bay gas insulated substation (GIS) (two 75 MVA 115 kV-34.5kV step-down transformers and primary distribution switchgear) will be designed to allow one of the two transformers to be taken out of service, effectively providing 75 MVA of total power (a 2-to-make-1 design).

The project will include a new Pacific Gas & Electric Switchyard (PG&E Switchyard) which will be built in a Breaker and a Half (BAAH) configuration. This will consist of 2 incoming 115kV circuits entering a BAAH configuration consisting of 6 115kV circuit breakers, steel structures, 115kV switches, metering devices, and a non-occupied control enclosure. The PG&E Switchyard and the Project Substation will not use Sulfur Hexafluoride (SF6) unless the short circuit current rating is greater than 63kA to align with CARB requirements.

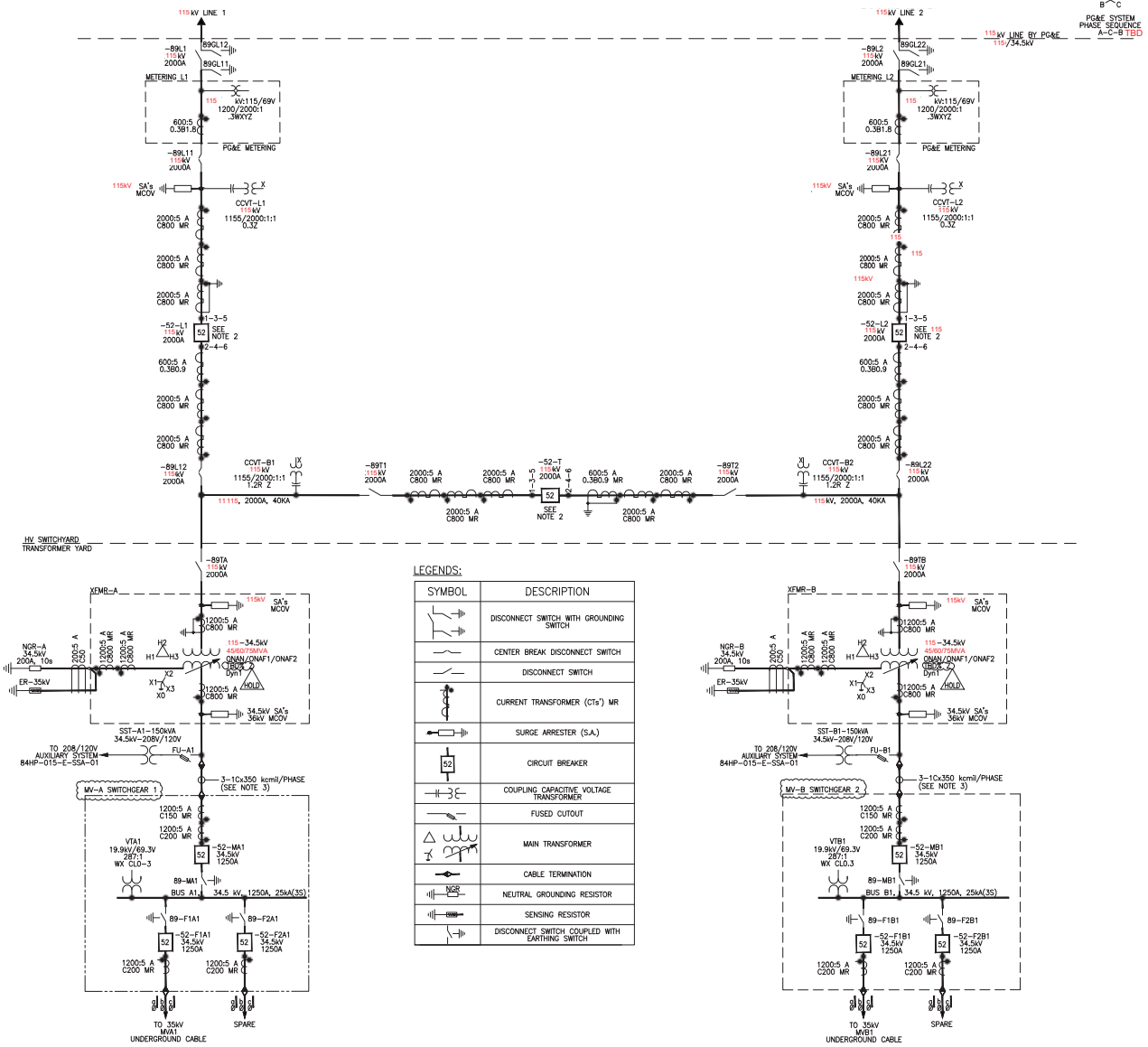
The Project Substation and PG&E Switchyard will have crushed rock surface with an aggregate base. An oil containment pit surrounding each transformer will capture unintended oil leaks. Access to the PG&E Switchyard will be from Eden Landing Road.

The Project Substation and PG&E Switchyard will be capable of delivering electricity to the SVY03 Campus from a new PG&E circuit but will not allow any electricity generated from the SVY03ABGF

to be delivered to the transmission grid. Availability of substation control systems will be ensured through a redundant DC battery backup system.

To serve the SVY03A Campus, PG&E will be constructing a “looped” transmission interconnection involving two offsite transmission line extensions. This would involve a line on the south side of the project that comprises a two circuits of 115 kV OH (Overhead) Transmission line (T-Line) from an existing PG&E Eastshore to Grant 115 kV Line which is located on the south side of the project.

A one-line diagram is provided for the Project Substation as Figure 2.3-8. A one-line diagram for the PG&E Switchyard is not yet available and has been requested.



ONE-LINE DIAGRAM FOR THE PROJECT SUBSTATION

FIGURE 2.3-8

2.3.5 Site Access and Parking

As shown on Figure 2.2-4, the overall project site will include three entrances. The main entrance to the SVY03A Campus will be off of Eden Landing Road near the southwest corner of the site and will be the primary access for vehicles, trucks, bikes, and pedestrians. A secondary access entrance will be off of Production Avenue just south of the proposed substation and will be used for emergency access only. The third access will be off Eden Landing Road east of the main entrance and will be used for PG&E to access its Switching Station.

The site will provide 63 vehicle parking spaces, of which 19 will be EV and 6 will be accessible spaces (2 large enough for vans). The site will also include 10 bicycle parking spaces.

The SVY03A Campus is anticipated to employ a total of 45 people, including security and maintenance staff. The full-time on-site facility maintenance staff would monitor and maintain the mechanical systems for the data center operation.

2.3.6 Water Storage

The SVY03ADC1 will use potable water for cooling within the DAHU's as described in Section 2.3.2.2 during hotter times of the year. To accommodate the peak demand of water use during those times, the project will include three (3) 62,000 gallon storage tanks Each tank will be constructed with steel bolted panels and will be approximately up to 19 feet in diameter and up to 42 feet high.

The use of the evaporative cooling system in the SVY03ADC1 would result in approximately 2.8 AFY (approximately 50,000 gallons per day (GPD) during peak use) of wastewater discharge to the existing City of Hayward wastewater system.

2.3.7 Stormwater Basin and Stormwater Controls

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

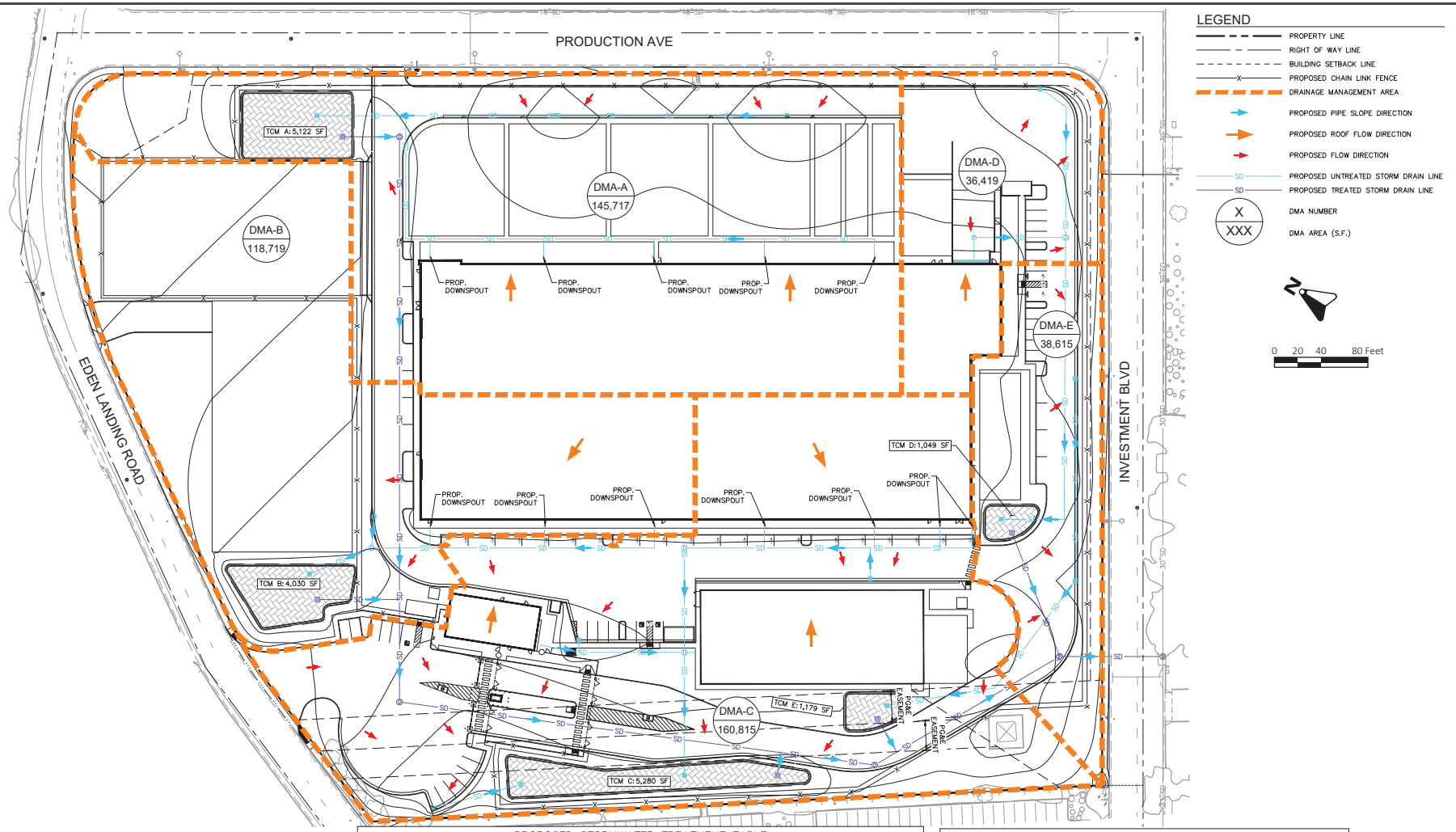
The design of the SVY03A Campus proposes to construct stormwater treatment areas consisting of LID (Low-Impact Development) bioretention areas totaling approximately 18,000 square feet, based on preliminary impervious calculations, sized according to the requirements of the MRP. The

stormwater treatment areas will be located throughout the site, and adjacent to paved parking areas and buildings. A stormwater control plan is shown in Figure 2.3-9.

In the existing condition, stormwater flows within the site from north to south and discharges into the public system at two laterals south of the property along Investment Blvd. The project will maintain the existing drainage patterns and will capture flow in catch basins along the drive aisles and will be conveyed through storm drainpipe into the bioretention areas on-site. Downspouts for the roof drainage will be piped under sidewalks and discharged to the bioretention areas. Bioretention areas will include perforated underdrains and overflow structures that connect to the on-site storm drains system which will eventually discharge to the public storm system in Investment Blvd.

According to Appendix I, Hydromodification Susceptibility Map, of the "C.3 Stormwater Technical Guidance" published by the Alameda Countywide Clean Water Program the project site is located in a "solid gray area", defined as streams or channels that are tidally influenced or depositional in their outfall to San Francisco Bay. According to the MRP, hydromodification controls (HMC) are not required for projects located in solid gray areas of the Hydromodification Susceptibility Map. Therefore, the SVY03A Campus will not incorporate HMC into the project's development.

As part of the construction of the new buildings, domestic water, fire water, sanitary sewer, fiber, and storm drain connections will be made from the City infrastructure systems located along Eden Landing Road, Production Ave., and Investment Blvd. A utility plan is shown in Figure 2.3-10



PROPOSED STORMWATER TREATMENT TABLE

DMA #	TOTAL AREA (SF)	PERVIOUS AREA (SF)	IMPERVIOUS AREA (SF)	EFFECTIVE IMPERVIOUS AREA (SF)	REQUIRED TREATMENT AREA 4% (SF)	TREATMENT PROVIDED (SF)	TREATMENT AREA
A	145,717	22,752	122,965	125240	5030	5,122	TCM A
B	118,719	25,201	93,518	96038	3840	4,030	TCM B
C	160,815	32,000	128,815	132015	5270	5,280	TCM C
D	36,419	5,117	31,302	31814	954	1,049	TCM D
E	38,615	12,000	26,615	27815	1110	1,179	TCM E
TOTAL	500,285	97,070	403,215	412922	16204	16660	N/A

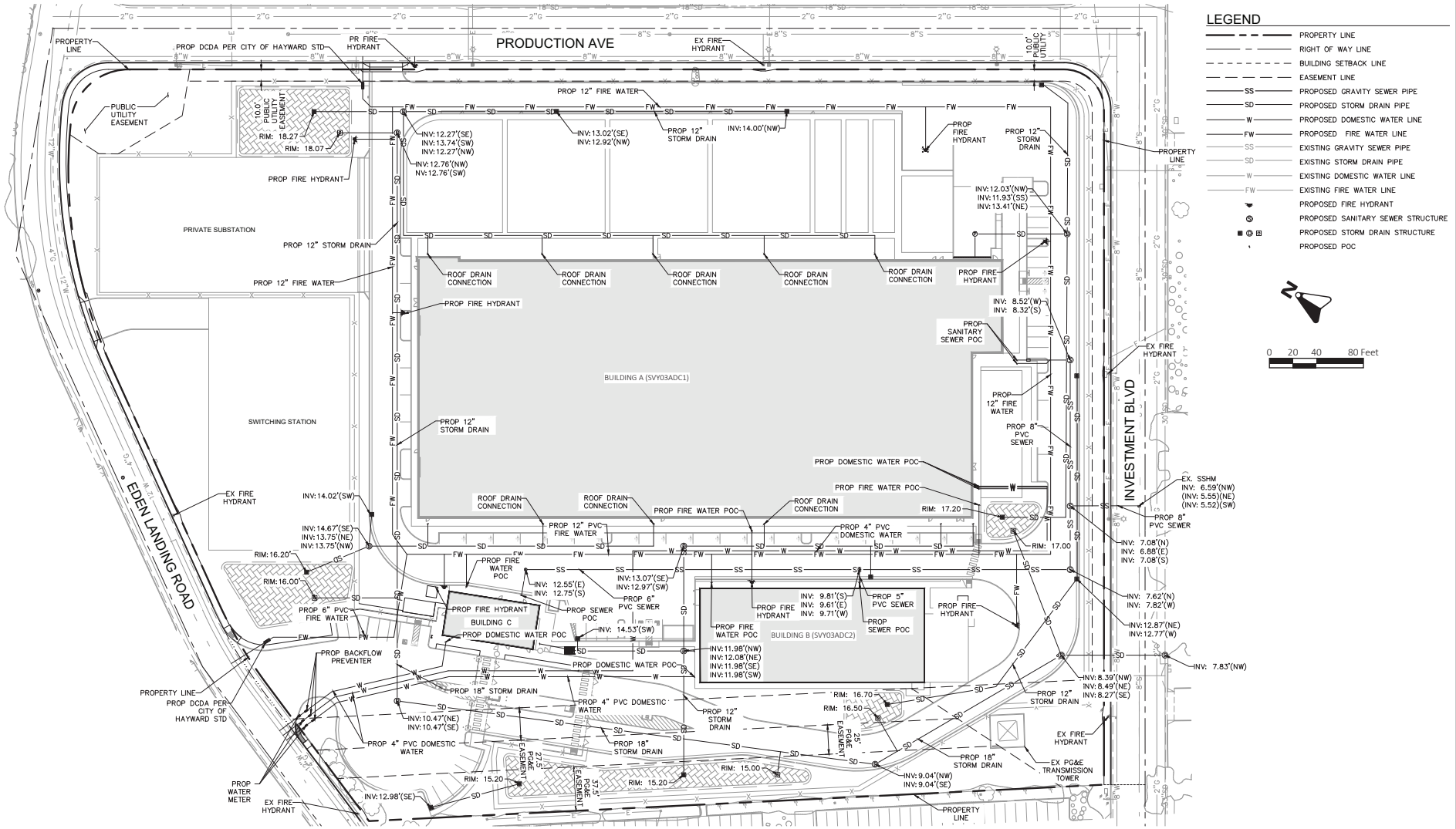
IMPERVIOUS VS PERVIOUS AREA

	TOTAL PROPERTY AREA (SF)	PERVIOUS AREA (SF)	IMPERVIOUS AREA (SF)	PERCENT PERVIOUS
EXISTING	500,285	64798	435,487	12.95%
PROPOSED	500,285	97070	403,215	19.40%

Source: HKS, August 14, 2023.

PRELIMINARY STORMWATER CONTROL PLAN

FIGURE 2.3-9



Source: HKS, August 14, 2023.

UTILITY PLAN

FIGURE 2.3-10

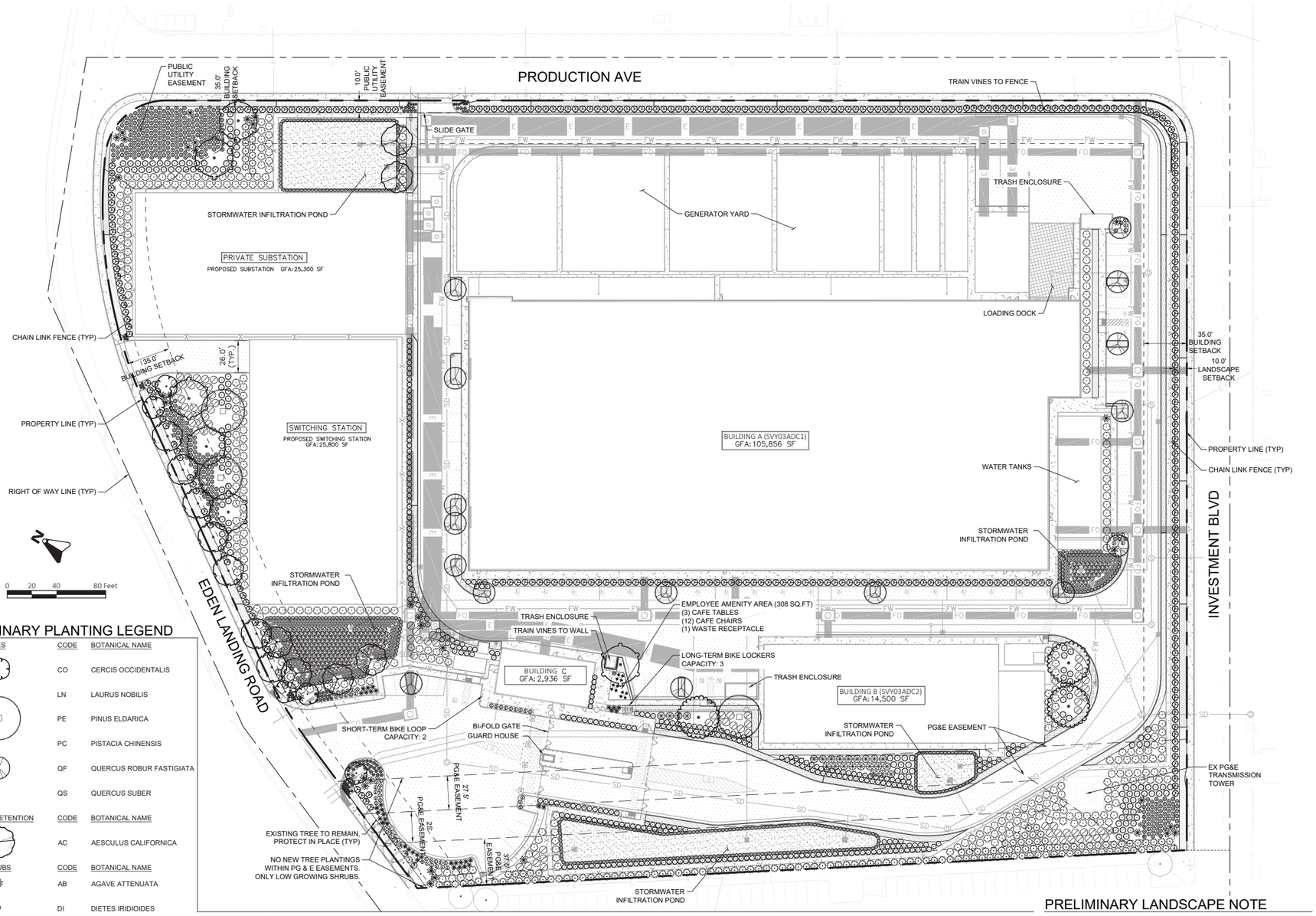
2.3.8 Associated Utility Interconnections

As part of the construction of the new buildings, domestic water, fire water, sanitary sewer, and fiber connections will be made from the City infrastructure systems located along Eden Landing Road, Production Avenue, and Investment Boulevard. There is a 12-inch diameter domestic water line located in Eden Landing Road that connects to an 8-inch diameter domestic water line in Production Avenue; both of these water lines are operated by the City of Hayward. The 12-inch domestic water line located in Eden Landing Road will serve as the primary source for potable water, building cooling, and fire supply to the project. The fire supply loop will also connect to the 8-inch domestic water line located in Production Avenue. The project's sanitary connection will tie to an existing 8-inch sanitary sewer that is located in Investment Boulevard along the project frontage.

2.3.9 Landscaping

The SVY03A Campus development proposes to remove 50 trees on-site, due to various conflicts with proposed civil and architectural improvements. The replacement of the trees on-site will comply with the mitigation measures described by the City of Hayward. All 50 on-site trees will be mitigated through a combination of planting new on-site trees per the City's prescribed replacement ratios, as well as paying into the City of Hayward in-lieu fund for new trees at select locations within the City.

New landscaping consisting of trees, large and medium shrubs, and groundcovers will be installed along the property boundaries, building perimeters, stormwater treatment facilities, and landscape beds distributed throughout the parking facilities. Trees will be planted a minimum of five feet away from new or existing water mains or utility lines. A site landscaping plan is shown in Figure 2.3-11.



PRELIMINARY PLANTING LEGEND

TREES	CODE	BOTANICAL NAME
	CO	CERCIS OCCIDENTALIS
	LN	LAURUS NOBILIS
	PE	PINUS ELDARICA
	PC	PISTACIA CHINENSIS
	QF	QUERCUS ROBUR FASTIGIATA
	QS	QUERCUS SUBER

BIORETENTION	CODE	BOTANICAL NAME
	AC	AESCULUS CALIFORNICA

SHRUBS	CODE	BOTANICAL NAME
	AB	AGAVE ATTENUATA
	DI	DIETES IRIDIOIDES
	HS	HELICTOTRICHON SEMPERVIRENS
	OM	OLEA EUROPAEA `MONTRA` TM
	PO	PENNISETUM ALOPECUROIDES
	PT	PHORMIUM TENAX
	PR	PHORMIUM X `AMAZING RED`
	PS	PITTOSPORUM TOBIRA 'SHIMA'
	RM	RHAMNUS CALIFORNICA `MOUND SAN BRUNO`
	RC	RHAPHIOLEPIS INDICA `CLARA`
	SC	SALVIA CLEVELANDII
	SL	SALVIA LEUCANTHA
	WM	WESTRINGIA FRUTICOSA `MORNING LIGHT`

BIO-RETENTION	CODE	BOTANICAL NAME
	CT	CHONDROPETALUM TECTORUM
	JP	JUNCUS PATENS
	MR	MUHLENBERGIA RIGENS

VINES	CODE	BOTANICAL NAME
	CP	CAMPSIS RADICANS
	PU	PARTHENOCISSUS TRICUSPIDATA

GROUND COVERS	CODE	BOTANICAL NAME
	BI	BACCHARIS PILULARIS 'PIGEON POINT'
	CG	CARISSA MACROCARPA `GREEN CARPET`
	CH	CEANOTHUS X 'CENTENNIAL'
	CB	COTONEASTER DAMMERI `CORAL BEAUTY`
	JH	JUNIPERUS HORIZONTALIS
	MP	MYOPORUM PARVIFOLIUM

HYDROSEED	CODE	BOTANICAL NAME
	DH	NON-IRRIGATED HYDROSSED

PRELIMINARY LANDSCAPE NOTE

THE SELECTION OF PLANT MATERIAL IS BASED ON CLIMATIC, AESTHETIC, AND MAINTENANCE CONSIDERATIONS. ALL PLANTING AREAS SHALL BE PREPARED WITH APPROPRIATE SOIL AMENDMENTS, FERTILIZERS AND APPROPRIATE SUPPLEMENTS BASED UPON A SOILS REPORT FROM AN AGRICULTURAL SUITABILITY SOIL SAMPLE TAKEN FROM THE SITE. BARK MULCH SHALL FILL IN BETWEEN SHRUBS TO SHIELD THE SOIL FROM THE SUN EVAPOTRANSPIRATION, AND RUN-OFF. ALL SHRUB BEDS SHALL BE MULCHED TO A 3" DEPTH TO HELP CONSERVE WATER, LOWER SOIL TEMPERATURE, AND REDUCE WEED GROWTH. THE SHRUBS SHALL BE ALLOWED TO GROW IN THEIR NATURAL FORMS. ALL LANDSCAPE IMPROVEMENTS SHALL FOLLOW THE GUIDELINES SET FORTH BY THE CITY OF HAYWARD MUNICIPAL CODE.

Source: HKS, August 14, 2023.

LANDSCAPING SITE PLAN

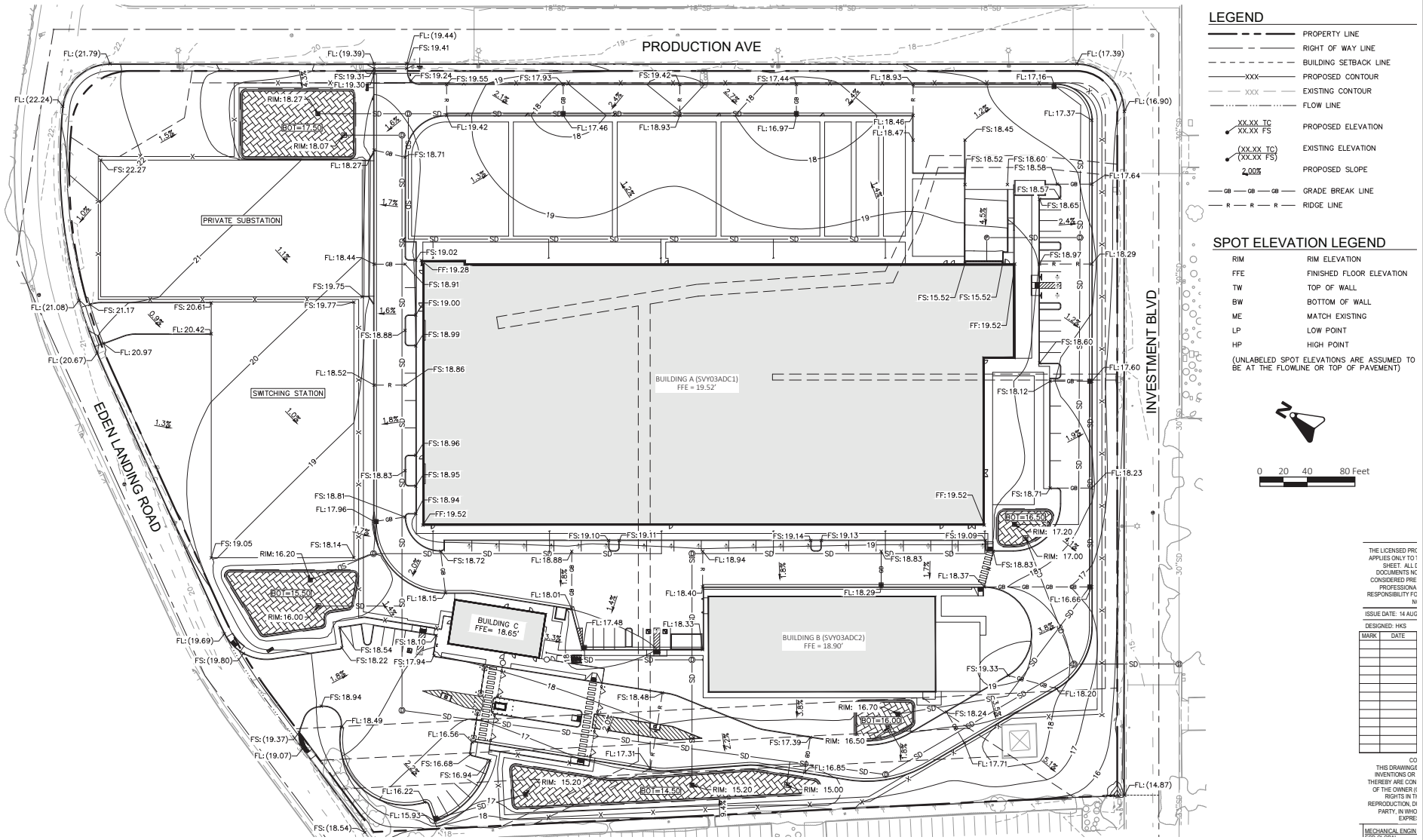
FIGURE 2.3-11

2.3.10 Site Demolition, Grading, Excavation, and Construction

Demolition, grading, excavation, and construction is anticipated to begin in summer of 2024 with an anticipated completion date in summer of 2026; a total of approximately 22 months. The peak construction workforce is approximately 150 workers per month with an average of approximately 100 workers per month. Appendix H contains a table with the anticipated workers per month during construction.

The proposed site grading is relatively balanced but will likely require up to 3,700 cubic yards of imported fill. Per geotechnical considerations, it is recommended that the foundation system be a combination of a matt slab with rammed aggregate piers. The maximum depth of required excavation for the matt slab will be 3-feet and the maximum depth of required excavation for the rammed aggregate piers will be approximately 20-feet (depth pending final geotechnical recommendations). For improvements at-grade that are not supported on a structural slab, the soil subgrade should be kept moist until it is covered by imported fill.

The maximum depth below existing grade for any of the drainage facilities (bioretention areas) is seven feet below existing grade. The drainage facilities for the site are spread evenly throughout the site plan. The total amount of area of drainage facilities provided for the site is approximately 18,000 square feet. The maximum extent of excavation for the drainage facilities on-site is 90,000 cubic-feet or approximately 3,500 cubic-yards. A site grading and drainage plan is shown in Figure 2.3-12.



Source: HKS, August 14, 2023.

SITE GRADING AND DRAINAGE PLAN

FIGURE 2.3-12

2.3.11 Site Water Supply and Use

2.3.11.1 *Site Grading and Construction*

Grading and construction of the SVY03A Campus is estimated to utilize approximately 1.75-acre feet of water over the 22-month construction period.

2.3.11.2 *Campus Operations*

Operation of the SVY03A Campus will require the approximate amounts of potable water as shown by use in Table 2.3-1 below.

Table 2.3-1: Potable Water Demand

Use	Projected Demand Volume
Domestic:	0.5 AFY
Landscape:	3.75 AFY
Evaporative Cooling:	5.2 AFY
Total Water Use:	**9.5 AFY**

It should be noted that the estimate for landscaping water will decrease with time as the plants become established adapt to the site environment.

STACK investigated the use of recycled water to be used at the site for evaporative cooling and rejected because Hayward's recycled water is not sufficient and would require expensive treatment and the infrastructure is not close to the site.

Section 3.0 Project Information

3.1 Project Title

Eden Landing SVY03A Data Center Campus

3.2 Lead Agency Contact

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

3.3 Project Applicant

STACK Infrastructure
Matthew Bourne
Director, Strategy & Development
1700 Broadway, Suite 1750
Denver CO 80290
mbourne@stackinfra.com

3.4 Project Location

The approximately 11.3-acre project site is located on two contiguous parcels bounded by Eden Landing Road on the north, Production Avenue on the east, and Investment Boulevard on the south, and a developed parcel on the west (refer to Figures 2.2-1, 2.2-2, and 2.2-3).

3.5 Assessor's Parcel Number

APN 461-0085-016-00
APN 461-0085-052-01

3.6 General Plan Designation and Zoning District

General Plan Designation:	Industrial Technology and Innovation Corridor
Zoning District:	IP - Industrial Park

Section 4.0 Environmental Setting, Impacts, and Mitigation

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

3.1	Aesthetics	3.11	Land Use and Planning
3.2	Agriculture and Forestry Resources	3.12	Mineral Resources
3.3	Air Quality	3.13	Noise
3.4	Biological Resources	3.14	Population and Housing
3.5	Cultural Resources	3.15	Public Services
3.6	Energy	3.16	Recreation
3.7	Geology and Soils	3.17	Transportation
3.8	Greenhouse Gas Emissions	3.18	Tribal Cultural Resources
3.9	Hazards and Hazardous Materials	3.19	Utilities and Service Systems
3.10	Hydrology and Water Quality	3.20	Wildfire

The discussion for each environmental subject includes the following subsections:

Environmental Setting – This subsection 1) provides a brief overview of relevant plans, policies, and regulations that compose the regulatory framework for the project and 2) describes the existing, physical environmental conditions at the project site and in the surrounding area, as relevant.

Impact Discussion – This subsection includes the recommended checklist questions from Appendix G of the CEQA Guidelines to assess impacts.

- **Project Impacts** – This subsection discusses the project's impact on the environmental subject as related to the checklist questions. For significant impacts, feasible mitigation measures are identified. "Mitigation measures" are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guidelines Section 15370). Each impact is numbered to correspond to the checklist question being answered. For example, Impact BIO-1 answers the first checklist question in the Biological Resources section. Mitigation measures are also numbered to correspond to the impact they address. For example, MM BIO-1.3 refers to the third mitigation measure for the first impact in the Biological Resources section.
- **Cumulative Impacts** – This subsection discusses the project's cumulative impact on the environmental subject. Cumulative impacts, as defined by CEQA, refer to two or more individual effects, which when combined, compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant effects taking place over a period of time. CEQA Guideline Section 15130 states that an EIR should discuss cumulative impacts "when the project's incremental effect is cumulatively

considerable." The discussion does not need to be in as great detail as is necessary for project impacts, but is to be "guided by the standards of practicality and reasonableness." The purpose of the cumulative analysis is to allow decision makers to better understand the impacts that might result from approval of past, present, and reasonably foreseeable future projects, in conjunction with the proposed project addressed in this EIR.

The CEQA Guidelines advise that a discussion of cumulative impacts should reflect both their severity and the likelihood of their occurrence (CEQA Guidelines Section 15130(b)). To accomplish these two objectives, the analysis should include either a list of past, present, and probable future projects or a summary of projections from an adopted general plan or similar document (CEQA Guidelines Section 15130(b)(1)).

The analysis must determine whether the project's contribution to any cumulatively significant impact is cumulatively considerable, as defined by CEQA Guideline Section 15065(a)(3). The cumulative impacts discussion for each environmental issue accordingly addresses the following issues: 1) would the effects of all of past, present, and probable future (pending) development result in a significant cumulative impact on the resource in question; and, if that cumulative impact is likely to be significant, 2) would the contribution from the proposed project to that significant cumulative impact be cumulatively considerable?

For each resource area, cumulative impacts may occur over different geographic areas. For example, the project effects on air quality would combine with the effects of projects in the entire air basin, whereas noise impacts would primarily be localized to the surrounding area. The geographic area that could be affected by the proposed project varies depending upon the type of environmental issue being considered. Section 15130(b)(3) of the CEQA Guidelines states that lead agencies should define the geographic scope of the area affected by the cumulative effect. Table 4.0-2 provides a summary of the different geographic areas used to evaluate cumulative impacts.

Table 4.0-2: Geographic Considerations in Cumulative Analysis

Resource Area	Geographic Area
Aesthetics	Project site and adjacent parcels
Agriculture and Forestry Resources	Countywide
Air Quality	San Francisco Bay Area Air Basin
Biological Resources	Project site and adjacent parcels
Cultural Resources	Project site and adjacent parcels
Energy	Energy provider's territory
Geology and Soils	Project site and adjacent parcels
GHGs	Planet-wide
Hazards and Hazardous Materials	Project site and adjacent parcels
Hydrology and Water Quality	Mount Eden Creek watershed
Land Use and Planning/Population and Housing	Citywide
Minerals	Identified mineral recovery or resource area
Noise and Vibration	Project site and adjacent parcels
Public Services and Recreation	Citywide
Transportation/Traffic	Citywide
Tribal Cultural Resources	Project site and adjacent parcels
Utilities and Service Systems	Citywide
Wildfire	Within or adjacent to the wildfire hazard zone

4.1 Aesthetics

4.1.1 Environmental Setting

4.1.1.1 *Regulatory Framework*

State

Streets and Highway Code Sections 260 through 263

The California Scenic Highway Program (Streets and Highway Code, Sections 260 through 263) is managed by the California Department of Transportation (Caltrans). The program is intended to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment.

Local

Hayward 2040 General Plan

The Hayward 2040 General Plan (General Plan) includes policies for the purpose of avoiding or mitigating impacts resulting from development projects within the City. The following policies are specific to aesthetics and are applicable to the proposed project.

Policy	Description
LU-1.2	The City shall maintain and implement commercial, residential, industrial, and hillside design guidelines to ensure that future development complies with General Plan goals and policies.
LU-6.7	Design Strategies. The City shall encourage developments within the Industrial Technology and Innovation Corridors to incorporate the following design strategies: • Provide attractive on-site landscaping and shade trees along street frontages and within employee and visitor parking lots. • Screen areas used for outdoor storage, processing, shipping and receiving, and other industrial operations with a combination of landscaping and decorative fences or walls. • Encourage consistent architectural façade treatments on all sides of building. • Screen roof-top equipment with roof parapets. • Design shipping and receiving areas and driveways to accommodate the turning movements of large trucks. • Develop coordinated and well-designed signage for tenant identification and way-finding. • Incorporate attractive building and site lighting to prevent dark pockets on the site. • Provide pedestrian walkways and connect building entrances to sidewalks. Use landscaped buffers with trees and attractive sound walls to screen adjacent residential areas and other sensitive uses.

NR-8.3	The City shall protect the visual characteristics of transportation corridors that are officially designated as having unique or outstanding scenic qualities, including portions of I-580, I-880, and SR 92.
NR-8.4	The City shall maintain and implement residential and non-residential design guidelines in order to protect existing views of the Bay shoreline.

City of Hayward Exterior and Parking Lot Lighting Ordinance (Municipal Code Section 10-24.3.2.030)

The City of Hayward's Exterior and Parking Lot lighting ordinance requires outdoor lighting on private property to be designed by a qualified lighting designer and include shielding to reduce light pollution and spill over onto adjacent properties or the public rights-of-way. This policy also requires lighting to be decorative and in keeping with the design of the development.

4.1.1.2 *Existing Conditions*

Existing On-Site Setting

The site is currently developed as the Eden Landing Business Park and consists of nine existing one-story buildings with a total combined square footage of approximately 167,471 sf.[3] The buildings are multi-tenant warehouse/office/light-industrial buildings. The existing buildings consist of structural, tilt-up, precast concrete wall panels with steel columns, upper wood façade roofs, and in some cases wood entrance canopies. The existing improvements were constructed between 1971 and 1973 and have been renovated multiple times throughout the years upon tenant turnover. The site improvements also include paved sidewalks, loading docks, parking and accessways with landscaping in small areas and generally along the site perimeter.

Native and non-native trees and ornamental landscaping are located along the frontage of the property, as well as the northern, western, and southern property boundaries.

Existing Surrounding Setting

The surrounding project area primarily consists of commercial and industrial/R&D land uses. The nearest residential land uses are located approximately 0.5 miles to the east. The Hayward Executive Airport is located approximately 1.75-miles northeast of the site.

The site is bound by Production Avenue and industrial/R&D facilities to the northeast, Eden Landing Road and commercial facilities to the northeast, with Highway 92 located just beyond the commercial facilities, Investment Boulevard and industrial and commercial facilities to the south, and industrial manufacturing/R&D facilities to the southwest. The surrounding facilities are all one-story buildings, many with corrugated metal roofs or flat roofs, paved parking/storage areas and limited landscaping, including ornamental trees and shrubs around the perimeter of sites and buildings. Buildings surrounding the site are similar in height and scale to the existing buildings on

[3] The square footage of the nine existing buildings are 29,800 sf, 22,927 sf, 13,552 sf, 22,804 sf, 15,400 sf, 16,974 sf, 17,136 sf, 16,908 sf, and 11,970 sf.

the project site. The roadways surrounding the project site, Production Avenue, Investment Boulevard, and Eden Landing Road, are paved, two-lane roadways. A PG&E overhead transmission line spans across the southwestern property line, held up by transmission towers, one of which is located within the property line.

Scenic Views and Resources

The City of Hayward has many scenic resources, including the hillsides and San Francisco Bay. Hillsides visible from the City include the Diablo Range to the east and Santa Cruz Mountains to the west, across the San Francisco Bay. The project site is relatively flat and is located in an urban area. There are no baylands visible from the project site. Views of the surrounding mountains and hills are currently mostly obscured by existing development and mature trees. The tops of the Diablo Range are faintly visible looking east of the project site, on public viewpoints down Investment Boulevard. However, these views are partially obscured by existing development and landscaping. No natural scenic resources such as rock outcroppings are present on the site or adjacent to the site.

Scenic Corridors

The project site is not located along a State-designated scenic highway. The nearest State-designated scenic highway is I-580 from Estudillo Avenue in San Leandro to SR-24 in Oakland, approximately 4.5-miles northeast of the project site. The designated scenic and eligible State scenic highways are not visible from the project site. The City's General Plan identifies Gateways where preservation and enhancement of views of the natural and man-made environment are crucial. The nearest Gateway to the project site is Hesperian Boulevard at the northern City limits, approximately two miles southeast of the project site.

4.1.2 Impact Discussion

For the purpose of determining the significance of the project's impact on aesthetics, except as provided in Public Resources Code Section 21099, would the project:

1) Have a substantial adverse effect on a scenic vista?
2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
3) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?[4] If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

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

4.1.2.1 *Project Impacts*

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

The proposed project would remove the nine existing buildings on-site and construct a new three-story data center building (SVY03ADC1), a one-story smaller data center building (SVY03ADC2), backup generators to support both data centers (SVY03ABGF), a security buildings, an on-site substation, and a PG&E switching station, collectively referred to as the SVY03A Campus. SVY03ADC1, the tallest proposed building, would have a height of approximately 94 feet measured to the top of the main structure, 100 feet measured to the top of the building parapet, and 116.5 feet measured to the top of the small penthouse.

The project would be located in an area of Hayward primarily developed with commercial and industrial/R&D land uses and would not be located within a scenic viewshed. As noted in Section 4.1.1.2 Existing Conditions, intermittent views of the Diablo Range are currently provided from public viewpoints on Investment Boulevard; however, views of the hills from these roadways are partially obscured by existing development and mature trees. Implementation of the proposed project would not affect views from Investment Boulevard.

The project would be visible from surrounding roadways, including Investment Boulevard, Eden Landing Road, Production Avenue, and Highway 92. Additionally, the project may be partially visible from the Eden Landing Ecological Reserve and the San Francsico Bay Trail, located approximately .25 mile south of the project site. While the project site is not currently visible from the Eden Landing Ecological Reserve and the San Francsico Bay Trail due to existing roads, landscaping, and buildings, the proposed SVY03ADC1 would be taller than adjacent buildings and could potentially be visible above the adjacent buildings when facing north. However, views from the Eden Landing Ecological Reserve and the San Francsico Bay Trail when facing north are largely urban in nature, and the project would be cohesive with the existing aesthetic. The scenic vista views from the Eden Landing Ecological Reserve and the San Francsico Bay Trail are largely visible when facing south, and therefore would not be obstructed by the project.

While the proposed development may partially block views from existing adjacent businesses, the existing views in the project area, which is located in a flat, developed urban area, are not considered scenic vistas. Therefore, the project would not significantly impact any scenic vistas. **(Less than Significant Impact)**

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

The project site is not located along a state designated scenic highway. The nearest state designated scenic highway to the project site is I-580, approximately 4.5-miles northeast of the project site. The site is not visible from I-580. The project site is not located within a state scenic

highway; therefore, implementation of the project would not damage scenic resources within a state designated scenic highway. **(Less than Significant Impact)**

c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The project site is located in an urbanized area. As discussed in Section 4.11 Land Use and Planning, the project's FAR and land use type would be consistent with the Industrial Technology and Innovation Corridor land use designation and the Industrial Park zoning subdistrict. However, the project would have a maximum height of 116.5 feet, which is above the maximum height of 75 feet. The project would undergo a Major Site Plan Review, a City process where new developments are reviewed by the City to ensure they are compatible with City policies, standards, and guidelines. The Major Site Plan Review process allows for increased building heights above the maximum allowed in the zoning subdistrict. By undergoing the City's Major Site Plan Review for increased building height, during which the City may impose conditions of approval or other requirements to guarantee compatibility, the project would not conflict with the City's zoning code.

The project would be required to conform to the applicable policies and actions set forth in the Hayward 2040 General Plan and applicable development standards set forth in the City of Hayward Municipal Code. The project would comply with the Hayward Industrial Design Guidelines and would be architecturally treated to fit the surrounding context of the site. The SVY03ADC1 data center building would be located a minimum of 20 feet from the property line along Production Avenue and a minimum 10 feet from the property lines along Eden Landing Road and Investment Boulevard. SVY03ADC2 and SCY03ABGF would be located southwest and west of building SVY03ADC1 and would maintain the minimum setback requirements as the main SCY03ADC1 building.

As discussed in Section 4.4, the project would remove all 50 existing trees onsite, including 47 protected trees. The project would plant 46 new trees and would replace 46 Protected Trees with trees equal in size and species or value pay into the City of Hayward in-lieu fund for new trees at select locations within the City for the remainder of the trees to be removed. The project would comply with the Hayward Tree Preservation Ordinance. New landscaping consisting of trees, large and medium shrubs, and groundcovers would be installed along the property boundaries, building perimeters, stormwater treatment facilities, and landscape beds distributed throughout the parking facilities, shielding the site, and improving the overall visual appearance of the site. Therefore, the removal of existing trees would not represent a visual loss. The proposed project would be consistent with the uses planned for the site by the Hayward 2040 General Plan and would be compatible with other buildings in the area. For these reasons, the proposed project would not conflict with applicable zoning or other regulations governing scenic quality. **(Less than Significant Impact)**

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

The project site is located in an urban area with existing industrial and commercial development and vehicular traffic. The site is currently developed with nine existing one-story warehouse/office/light-industrial buildings, paved sidewalks, loading docks, parking and accessways with landscaping in small areas and generally along the site perimeter. Existing lighting on-site includes building-mounted security lighting, pole-mounted lights throughout parking areas, and streetlights along Production Avenue, Eden Landing Road and Investment Boulevard. The existing uses result in light and glare from on-site lights, streetlights, and vehicle headlights as vehicles enter and exit the project site.

The project would include new lighting for security purposes, including outdoor lighting of driveways and walkways, as well as light from vehicles. However, the increase in night lighting from this new development would not significantly increase the ambient light levels in the area, which are already dominated by existing light sources from surrounding industrial/office uses and roadways. All proposed lighting would include shielding to reduce light spillover onto adjacent properties, consistent with the City's Exterior and Parking Lot Lighting Ordinance.

The project would not include large portions of glass siding or other materials that would create glare. Additionally, proposed trees and landscaping along the project frontage would partially obscure the site from view of passing vehicles, further reducing potential glare. For the reasons described above, the project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. **(Less than Significant Impact)**

4.1.2.2 *Cumulative Impacts*

Would the project result in a cumulatively considerable contribution to a significant cumulative aesthetics impact?

The geographic area for cumulative aesthetic impacts is limited, given the flat topography of the project site and adjacent properties in which the project site would be visible. As discussed above, the project site is not located along or visible from a designated state scenic highway or a scenic vista. As discussed previously, the Hayward 2040 General Plan includes standards, policies, and guidelines to reduce impacts to scenic views and resources. The Hayward 2040 General Plan EIR concluded that with implementation of the General Plan policies, build out of the development envisioned would not result in a significant aesthetics impact.

All cumulative projects occurring in the vicinity of the project are urban in nature (primarily industrial and commercial uses) and would be subject to applicable General Plan policies, development standards under the Zoning Code, the design review process to ensure consistency with applicable design guidelines (depending on the proposed use and location), as well as

adherence to applicable lighting standards, and signage regulations. By requiring all cumulative projects to adhere to the aforementioned measures, guidelines, and requirements, aesthetic impacts would be minimized or reduced. All cumulative projects would undergo individual review to ensure that site selection, building materials, heights, and lighting is implemented in a manner that does not result in significant visual impacts. For these reasons, there would not be a significant cumulative aesthetic or visual impact. Furthermore, the proposed project's contribution to this already less than significant cumulative impact would not be cumulatively considerable. **(Less than Significant Cumulative Impact)**

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

4.2.1.1 *Regulatory Framework*

State

Farmland Mapping and Monitoring Program

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

California Land Conservation Act

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

Fire and Resource Assessment Program

The California Department of Forestry and Fire Protection (CAL FIRE) identifies forest land, timberland, and lands zoned for timberland production that can (or do) support forestry resources.[5] Programs such as CAL FIRE's Fire and Resource Assessment Program and are used to identify whether forest land, timberland, or timberland production areas that could be affected are located on or adjacent to a project site.[6]

4.2.1.2 *Existing Conditions*

According to the Alameda County Important Farmland 2018 Map, the project site is designated as *Urban and Built-Up Land. Urban and Built-Up Land* is defined as residential land with a density of at least six units per 10-acre parcel, as well as land used for industrial and commercial purposes, golf

[5] Forest Land is land that can support 10 percent native tree cover and allows for management of forest resources (California Public Resources Code Section 12220(g)); Timberland is land not owned by the federal government or designated as experimental forest land that is available for, and capable of, growing trees to produce lumber and other products, including Christmas trees (California Public Resources Code Section 4526); and Timberland Production is land used for growing and harvesting timber and compatible uses (Government Code Section 51104(g)).

[6] California Department of Forestry and Fire Protection. "Fire and Resource Assessment Program." Accessed July 12, 2023. http://frap.fire.ca.gov/.

courses, landfills, airports, sewage treatment, and water control structures.[7] According to Alameda County Office of the Assessor, the site is not subject to a Williamson Act contract.

4.2.2 Impact Discussion

For the purpose of determining the significance of the project's impact on agriculture and forestry resources, would the project:

1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?
4) Result in a loss of forest land or conversion of forest land to non-forest use?
5) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

4.2.2.1 *Project Impacts*

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

According to the Alameda County Important Farmland 2018 Map, the project site is designated as *Urban and Built-Up Land*. The project, therefore, would not convert farmland to non-agricultural use. **(No Impact)**

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The site is located within the Industrial Park zoning district.[8] According to the Alameda County Office of the Assessor, the site is not subject to a Williamson Act contract. The project, therefore,

[7] California Department of Conservation, *Alameda County Important Farmland Map 2018.* https://www.conservation.ca.gov/dlrp/fmmp/Pages/Alameda.aspx

[8] City of Hayward. "City of Hayward Zoning." August 22, 2019. Accessed July 19, 2023. https://opendata.hayward-ca.gov/documents/Hayward::hayward-zoning-pdf-map-42x70-190627/explore.

would not conflict with existing zoning for agricultural use, or a Williamson Act contract. **(No Impact)**

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production?

The site is located within the Industrial Park zoning district.[9] The project, therefore, would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. **(No Impact)**

d) Would the project result in a loss of forest land or conversion of forest land to non-forest use?

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

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

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

4.2.2.2 *Cumulative Impacts*

Would the project result in a cumulatively considerable contribution to a cumulatively significant agricultural and forestry resources impact?

The geographic area for cumulative agricultural and forestry resource impacts is the County of Alameda. The project would have no impact on agricultural and forestry resources and, therefore, the project has no potential to combine with other projects to result in cumulative impacts to these resources. **(No Cumulative Impact)**

[9] City of Hayward. "City of Hayward Zoning." August 22, 2019. Accessed July 19, 2023. https://opendata.hayward-ca.gov/documents/Hayward::hayward-zoning-pdf-map-42x70-190627/explore.

4.3 Air Quality

This section presents the evaluation of emissions and impacts resulting from the construction and operation of SVY03A Backup Generating Facility (BGF) which supports the SVY03A Data Center Campus (SVY03A Campus), as well as the proposed mitigation measures to be used to minimize emissions and limit impacts to below established significance thresholds. This section is based upon an analysis prepared by Atmospheric Dynamics, Inc. in accordance with the California Energy Commission (CEC) application requirements for a Small Power Plant Exemption (SPPE) pursuant to the power plant siting regulations, and the rules and regulations of the Bay Area Air Quality Management District (BAAQMD or District). This air quality analysis is but one part of a larger analysis, which seeks an SPPE Decision from the CEC and a Determination of Compliance (DOC) from the BAAQMD.

Appendix A contains supporting data for the Air Quality and Public Health analyses, broken down as follows:

Appendix A, AQ 1 – Emissions Data for Criteria and Toxic Pollutants [diesel particulate matter (DPM)]
Appendix A, AQ 2 – Engine Specification Brochures, Control Systems Specifications, and Emissions Certification Information
Appendix A, AQ 3 – Modeling Support Data
Appendix A, AQ 4 – CalEEMod Analysis for Construction and Miscellaneous Operational Emissions
Appendix A, AQ 5 – Risk Assessment Support Data

4.3.1 Environmental Setting

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

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

4.3.1.1 *Existing Air Quality*

In 1970, the United States Congress instructed the US EPA to establish standards for air pollutants, which were of nationwide concern. This directive resulted from the concern of the effects of air pollutants on the health and welfare of the public. The resulting Clean Air Act (CAA) set forth air quality standards to protect the health and welfare of the public. Two levels of standards were promulgated – primary standards and secondary standards. Primary national ambient air quality standards (NAAQS) are "those which, in the judgment of the administrator [of the US EPA], based on air quality criteria and allowing an adequate margin of safety, are requisite to protect the public health (state of general health of community or population)." The secondary NAAQS are "those which in the judgment of the administrator [of the US EPA], based on air quality criteria, are requisite to protect the public welfare and ecosystems associated with the presence of air pollutants in the ambient air." To date, NAAQS have been established for seven criteria pollutants as follows: sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sub 10-micron particulate matter (PM10), sub 2.5-micron particulate matter (PM2.5), and lead (Pb).

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

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

Table 4.3-1: California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards Concentration	National Standards Concentration
Ozone	1 hour	0.09 ppm (180 µg/m^3)	-
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)
Carbon monoxide (CO)	8 hours	9.0 ppm (10,000 µg/m^3)	9 ppm (10,000 ug/m^3)
	1 hour	20 ppm (23,000 µg/m^3)	35 ppm (40,000 ug/m^3)
Nitrogen dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)
Sulfur dioxide (SO_2)	Annual Arithmetic Mean	-	0.030 ppm (80 µg/m^3)
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	3 hours	-	0.5 ppm (1300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)
Suspended particulate matter or PM10 (10 micron)	24 hours	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	-
Suspended particulate matter or PM2.5 (2.5 micron)	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3 (3-year average)
	24 hours	-	35 µg/m^3
Sulfates	24 hours	25 µg/m^3	-
Lead (Pb)	30 days	1.5 µg/m^3	-
	Calendar Quarter	-	1.5 µg/m^3
	Rolling 3-month Average	-	0.15 µg/m^3

ppm = parts per million, ppb=parts per billion, µg/m^3 = micrograms per cubic meter

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

Ozone

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

Carbon Monoxide

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

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

PM10 consists of particulate matter that is 10 microns or less in diameter (a micron is one- millionth of a meter), and fine particulate matter, $PM_{2.5}$, which consists of particulate matter 2.5 microns or less in diameter. Both PM_{10} and $PM_{2.5}$ represent fractions of particulate matter, which can be inhaled into the air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, combustion, and atmospheric photochemical reactions. Some of these operations, such as demolition and construction activities, contribute to increases in local PM_{10} and $PM_{2.5}$ concentrations, while others, such as stationary source emissions, vehicular traffic, etc. affect regional PM_{10} and $PM_{2.5}$ concentrations.

Nitrogen Dioxide and Sulfur Dioxide

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

Lead

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

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is a naturally occurring gas contained, as a for-instance, in geothermal steam from the Geysers. H_2S has a "rotten egg" odor at concentration levels as low as 0.005 parts per million (ppm). The state 1-hour standard of 0.03 ppm is set to reduce the potential for substantial odor complaints. At concentrations of approximately 10 ppm, exposure to H_2S can lead to health effects such as eye irritation.

Toxic/Hazardous Air Contaminants

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

Toxic air contaminants are regulated under both state and federal laws. Federal laws use the term "Hazardous Air Pollutants" (HAPs) to refer to the same types of compounds referred to as TACs under state law. Both terms generally encompass the same compounds. For the sake of consistency, this analysis will use TACs when referring to these compounds rather than HAPs. Under the Clean Air Act Amendments of 1990, approximately 190 substances are designated as TACs. Appendix AQ1 presents the annual emissions of the TACs in Table AQ1-1 and AQ1-2. Tables in the emissions section below present the emissions from the diesel engines at the SVY03A facility. TAC emissions are well below the major source thresholds; therefore, the facility is not a major source subject to MACT.

Attainment Status

The EPA designates the attainment status of regional areas with respect to federal air quality standards, while the CARB designates the attainment status of regional areas of California with respect to state air quality standards. Local air districts in California play a vital role is such designations at both levels. These classifications depend on whether the monitored ambient air quality data shows compliance, or non-compliance with the ambient air quality standards, respectively. The SVY03A and SVY03A site is located within Alameda County, under the jurisdiction of the BAAQMD. Table 4.3-2 summarizes the attainment status for each of the criteria pollutants in the BAAQMD with regards to both the federal and state standards.

Table 4.3-3 presents the annually collected air quality monitoring values used for determining background air quality values for the project. These values were derived for 2020-2022 from the following monitoring sites:

- Ozone – Hayward – 3466 La Mesa Dr., Hayward, CA. 94542 – ID 06-001-2001

- CO, NO_2, PM2.5 – Oakland East – 9925 International Blvd., Oakland, CA. 94603- ID 06-001-0009
- SO_2 – Oakland West – 1100 21st St., Oakland, CA. 94607 – ID 06-001-0011
- PM10 – Jackson St. – 158 E. Jackson St., San Jose, CA. – ID 06-085-0005

Table 4.3-2: Attainment Status for the San Francisco Bay Area Air Basin

Pollutant	Averaging Time	Federal Designation	State Designation
Ozone	1 Hour	Marginal Non Attainment	Non-Attainment
	8 Hour	Non-Attainment	Non-Attainment
CO	1 Hour	Maintenance	Attainment
	8 Hour	Maintenance	Attainment
NO_2	1 Hour	Attainment	Attainment
	Annual AM	Attainment	Attainment
SO_2	1 Hour	Attainment	Attainment
	3 Hour	Attainment	Attainment
	24 Hour	Attainment	-
	Annual AM	Attainment	-
PM10	24 Hour	Attainment	Non-Attainment
	Annual AM	-	Non-Attainment
PM2.5	24 Hour	Attainment	-
	Weighted AM	Attainment	Non-Attainment
Lead	30 day Avg	Attainment	Attainment
	Calendar Qtr.	Attainment	-
	Rolling 3 Month Avg	-	-
Visibility Reducing PM (VRP)	8 Hour	-	Unclassified
Sulfates	24 Hour	-	Attainment
H2S	1 Hour	-	Unclassified
Vinyl Chloride	24 Hour	-	No info

The SVY03A is not expected to emit lead, visibility reducing particulate (VRP), sulfates, hydrogen sulfide, or vinyl chloride. Therefore, these pollutants are not analyzed further in this report.

4.3.1.2 *Existing Conditions*

The existing air quality conditions in the project area are summarized in Tables 4.3-3 and 4.3-4, which provide the background ambient air concentrations of criteria pollutants for the previous three (3) years as measured at certified monitoring stations near the project site.

To evaluate the potential for air quality degradation as a result of the project, modeled project air concentrations are combined with the respective background concentrations as presented in Table 4.3-4 and used for comparison to the NAAQS and CAAQS.

Table 4.3-3: Measured Ambient Air Quality Concentrations by Year

Pollutant	Units	AvgTime	Concentration Value Type	2020	2021	2022
Ozone	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	0.116	0.097	0.098
Ozone	ppb	8-Hr	CAAQS-1st Highs/3-yr Max	0.092	0.082	0.072
Ozone	ppb	8-Hr	NAAQS-4th Highs/3-yr Avg	0.071	0.063	0.059
NO_2	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	59.2	48.8	51
NO_2	ppb	1-Hr	NAAQS-98th%s/3-yr Avg	38.9	35.3	40
NO_2	ppb	Annual	CAAQS/NAAQS-AAM/3-yr Max	9	8	8.93
CO	ppm	1-Hr	CAAQS-1st Highs/3-yr Max	1.9	1.6	1.6
CO	ppm	8-Hr	CAAQS-1st Highs/3-yr Max	1.7	1.1	1.3
SO_2	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	15.4	10.9	8
			NAAQS-99th%s/3-yr Avg	5	3	5
		24-Hr	CAAQS-1st Highs/3-yr Max	2.5	1.2	1.2
		Annual	CAAQS/NAAQS-AAM/3-yr Max	0.27	0.03	0.001
PM10	µg/m^3	24-Hr	CAAQS-1st Highs/3-yr Max	134	42.8	41
		Annual	CAAQS-AAM/3-yr Max	58	36.1	nd
PM2.5	µg/m^3	24-Hr	NAAQS-98th%/3-yr Avg	46.7	19.4	21
		Annual	NAAQS/CAAQS –AAM/3-yr Max	12	11	8.3

Sources: EPA AIRS Monitor Values and CARB ADAM data.

Data station: See station data in text above.

CO and SO_2 data for all years from EPA AIRS. Ozone, NO_2, PM10, and PM2.5 data from CARB for 2020 and 2021, and from EPA AIRS for 2022.

Table 4.3-4: Background Air Quality Data Summary

Pollutant and Averaging Time	Background Value (µg/m^3)
Ozone – 1-hour Maximum CAAQS	227.7
Ozone – 8-hour Maximum CAAQS/ 3-year average 4th High NAAQS	180.6/126.3
PM10 – 24-hour Maximum CAAQS	134
PM10 – Annual Maximum CAAQS	58
PM2.5 – 3-Year Average of Annual 24-hour 98th Percentiles NAAQS	46.7
PM2.5 – Annual Maximum CAAQS/NAAQS 3-Year Average of Annual	12/10.4
CO – 1-hour Maximum CAAQS	2,176
CO – 8-hour Maximum CAAQS	1,904
NO_2 – 1-hour Maximum CAAQS/ 3-Year Average of Annual 98th Percentile 1-hour Daily Maxima NAAQS	111.4/71.6
NO_2 – Annual Maximum CAAQS/NAAQS	16.9
SO_2 – 1-hour Maximum CAAQS/ 3-Year Average of Annual 99th Percentile 1-hour Daily Maxima NAAQS	40.3/11.3
SO_2 – 24-hour Maximum CAAQS	6.5
SO_2 – Annual Maximum NAAQS	0.71

Sources: EPA AIRS Monitor Values and CARB ADAM data.

Data station: See station data in text above.

CO and SO_2 data for all years from EPA AIRS. Ozone, NO_2, PM10, and PM2.5 data from CARB for 2020 and 2021, and from EPA AIRS for 2022.

Conversion of ppm/ppb measurements to µg/m^3 concentrations based on:
µg/m^3 = ppm x 40.9 x MW, where MW = 48, 28, 46, and 64 for ozone, CO, NO_2, and SO_2, respectively.

4.3.1.3 *Regulatory Background*

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

Federal

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

New Source Performance Standards

The SVY03A will be subject to the applicable New Source Performance Standards (NSPS) standards that are identified below. A description of the applicant's compliance plan to meet each standard is included.

40 CFR Part 60, Subpart IIII

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines became effective July 11, 2006. The diesel engines are subject to Subpart IIII. The proposed engines are EPA Tier 2 rated and will comply with these regulations. Furthermore, the proposed engines will meet the BAAQMD BACT Policy requirements for engines rated in excess of 1000 bhp to meet the EPA Tier 4 emissions standards.

Compression Ignition (CI) Diesel Engines Emission Standards

Based on 40 CFR 60.4202, emergency CI engines rated at > 560 kW are subject to the Tier 2 emissions standards in 40 CFR 89.112, Table 1, as follows:

- Tier 2 – NO_x+NMHC 6.4 g/kw-hr = 4.8 g/bhp-hr
- Tier 2 – CO 3.5 g/kw-hr = 2.6 g/bhp-hr
- Tier 2 – PM10/2.5 0.20 g/kw-hr = 0.15 g/bhp-hr
- SO_2 fuel sulfur content not to exceed 15 ppmw

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

The proposed diesel-fired engines will satisfy these requirements based upon data supplied by the manufacturer as certified by EPA. Furthermore, the proposed engines will be required to meet the BAAQMD BACT Policy requirements, which require Tier 4 emission limits for engines rated in excess of 1,000 bhp. These engines will be equipped with post combustion controls necessary to achieve the EPA Tier 4 emissions standards (which includes the use of an oxidation catalyst, selective catalytic reduction (SCR) and a diesel particulate filter (DPF). The Tier 4 limits are:

- Tier 4 – NO_x 0.5 g/bhp-hr
- Tier 4 – VOC 0.14 g/bhp-hr
- Tier 4 – CO 2.6 g/bhp-hr
- Tier 4 – PM10/2.5 0.02 g/bhp-hr
- SO_2 fuel sulfur content not to exceed 15 ppmw

40 CFR Part 60 Subpart ZZZZ

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

BAAQMD Air Quality Standards and Regulations

The section briefly describes the regulations which would apply to the SVY03A as set forth in the BAAQMD Rules and Regulations.

Regulation 2 Rule 2 – New Source Review (NSR)

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

BACT Requirements

A review of the BAAQMD BACT for CI-Stationary Emergency Standby engines rated at greater than 1,000 BHP requires the use of post combustion controls necessary to achieve the EPA Tier 4 emission limits. As referenced above, the proposed engines will satisfy the Tier 4 emission limits as well as the BAAQMD BACT requirements as follows:

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

NSR Offset Requirements

Required emissions offsets as identified in this application will be obtained in compliance with the Regulation 2 Rule 2 NSR rule provisions in Section 302. The offset provisions of Regulation 2 Rule 2 that apply to the proposed project are as follows:

- Pursuant to the BAAQMD NSR Rule (Regulation 2 Rule 2), section 2-2-302, offsets must be provided for NO_x or POC (VOC is used in this application), for any source with potential emissions greater than 10 tons/yr. For sources which emit NOx or VOC in excess of 10 tpy but less than 35 tpy, these offsets can be provided by either of the two methods outlined in subsections 302.1.1 or 302.1.2 as follows; (1) the APCO must provide the required offsets from the Small Facility Bank Account, or (2) if the Small Facility Bank Account is exhausted then it is the responsibility of the Applicant to provide the required offsets to mitigate the proposed emissions net increase. VOC emissions from the proposed facility are less than 10 tpy, so VOC offsets are not required under the District NSR rule. NOx

emissions are greater than 35 tpy, and as such, the applicant must secure NOx offsets at a ratio of 1.15:1 for any un-offset cumulative increase in emissions. The NOx offsets cannot be acquired from the Small Facility Offset Bank.

- Offset mitigation for PM10, PM2.5, and sulfur dioxide emissions is addressed in Section 2-2-303. This section specifies that offsets are only required if the source has the potential to emit any of these pollutants in excess of 100 tons per year. The Applicant notes that the worst case PM10, PM2.5, and SO2 emissions from the SVY03A are 0.161, 0.161, and 0.05 tons per year respectively. The Applicant believes that mitigation for emissions at these low emissions levels is not warranted, and such mitigation is not required under Regulation 2 Rule 2.

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

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

a. Total hours run each year
b. Total hours of emergency operation per year
c. Specify the nature of each emergency operation

The proposed engine models will comply with the above requirements.

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

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

State

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

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

Regional

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

BAAQMD Clean Air Plan

The 2017 Bay Area Clean Air Plan was adopted by the BAAQMD on April 19, 2017, and provides a regional strategy to protect public health and protect the climate. The 2017 Bay Area Clean Air Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan, and is a multi-pollutant air quality plan addressing four categories of air pollutants (BAAQMD, 2017b): 1) Ozone and the primary ozone precursor pollutants (VOCs and NO_x); 2) Particulate matter (PM10 and PM2.5), as well as their precursors; 3) TACs/HAPs; and 4) Greenhouse gases.

4.3.2 Impact Discussion

For the purpose of determining the significance of the project's impact on air quality, would the project:

1) Conflict with or obstruct implementation of the applicable air quality plan?
2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?
3) Expose sensitive receptors to substantial pollutant concentrations?
4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

4.3.2.1 *Significance Criteria*

The project analysis is based upon the general methodologies in the most recent BAAQMD CEQA Guidelines (BAAQMD, 2022) and significance thresholds for the SFBAAB, including the criteria pollutant thresholds listed in Table 4.3-5.

Table 4.3-5: BAAQMD CEQA Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
CO	None	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinances or Best Management Practices	None	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million	10 per one million	
Chronic or Acute Hazard Index	1.0	1.0	
Incremental annual average $PM_{2.5}$	0.3 µg/m^3	0.3 µg/m^3	
GHGs – Stationary Source Projects			
CO_2e	None	10,000 MT/yr (11,023 short tons)	
Health Risks and Hazards for Sensitive Receptors (Cumulative from All Sources within 1,000-Foot Zone of Influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		
Annual Average $PM_{2.5}$	0.8 µg/m^3		

4.3.2.2 *Impact Summary*

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

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

The SVY03A project would not conflict with or obstruct the implementation of the applicable air quality plan due to the following:

- The SVY03A will comply with all applicable rules and regulations of the BAAQMD regarding emissions of criteria pollutants.
- The SVY03A will comply with all applicable rules and regulations of the BAAQMD regarding emissions of toxic pollutants.
- The proposed engines at the SVY03A will comply with the applicable federal Tier 2 emissions standards for emergency standby electrical generation CI engines. In addition, compliance with the BAAQMD BACT Policy guidance for diesel engines rated at greater than 1000 BHP will ensure compliance with the EPA Tier 4 emissions standards.
- The SVY03A will comply with all applicable provisions of the applicable 2017 BAAQMD Air Quality Implementation Plan.
- The SVY03A will obtain and maintain all required air quality related permits from the BAAQMD, and requirements imposed by the California Energy Commission.

(Less than Significant Impact)

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

The SVY03A project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard, due to the following:

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

(Less than Significant Impact with Mitigation Incorporated)

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

The SVY03A project would not expose sensitive receptors to substantial pollutant concentrations due to the following:

- The air quality impact analysis presented herein shows that the SVY03A will not cause or

contribute to a violation of any state or federal ambient air quality standard.

- The construction and operational health risk assessments presented herein indicate that the emissions of toxic air contaminants from the SVY03A processes will not cause a significant risk to any sensitive or non-sensitive receptor with respect to cancer or chronic impacts.

(Less than Significant Impact)

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

The SVY03A project would not result in other emissions or odors that would adversely affect a substantial number of people due to the following:

- Similar facilities, both larger and smaller in scale, have not been identified as sources of odors that would adversely affect offsite receptors.
- The SVY03A facility is not one of the project types listed in the BAAQMD CEQA guidelines as producing odors that may affect offsite receptors.
- The applicant has not identified any operational or construction practices that are planned for use at the project site, that would generate substantial amounts of odors that would affect offsite receptors.

(Less than Significant Impact)

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

Project Emissions

Construction

Project construction emissions of CO, VOCs, NO_x, SO_2, PM10, and PM2.5 were evaluated. Detailed construction emission calculations are presented in Appendix AQ4. Onsite construction emissions from construction of the SVY03A will result from demolition activities, site preparation and grading activities, building erection and parking lot construction activities, "finish" construction activities, and the use of onsite construction equipment. Construction emissions from the SVY03A are negligible but are included in the emission calculations for the SVY03A. Offsite construction emissions will be derived primarily from materials transport to and from the site, and worker travel. Emissions from the 22-month construction period (evaluated at 20.25 months, which would serve to slightly overstate daily emissions by assuming a shorter construction period with fewer days to complete the construction program) were estimated using the CalEEMod program. Estimated criteria pollutant construction emissions for the project are summarized in Table 4.3-6. Construction support data and the CalEEMod analysis output are presented in Appendix AQ-4.

The BAAQMD CEQA Air Quality Guidelines considers exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard to be significant. BAAQMD recommends a 1,000-foot zone of influence around project boundaries. While construction activities are temporary and there are no sensitive receptors within 1,000 feet, cancer risk was nonetheless analyzed to determine community health risk impacts, including worker exposure from construction activities. See the construction HRA results in the Public Health section of this analysis.

Table 4.3-6: Criteria Pollutant Emissions from Mitigated Onsite Construction Activities

Scenario	NO_x	CO	VOC	SO_x	PM10	PM2.5	CO_2e
Avg. Daily Emissions, Lbs for the Const Period	3.59	18.52	10.49	0.043	0.061 exhaust	0.06 exhaust	NA
Max Project Emissions, Tons/Period	0.80	4.13	2.34	0.0096	0.0136 exhaust 0.80 fugitives	0.0133 exhaust 0.211 fugitives	975
Max Emissions Year, TPY	0.3916 (2024)	2.2418 (2024)	2.411 (2025)	0.0046 (2024)	0.00739 exhaust (2024)	0.00728 exhaust (2024)	505.2 (2024)
Avg. Daily Emissions, Lbs for the Max Year	3.01	17.24	18.55	0.0354	0.057	0.056	NA
BAAQMD Thresholds, Lbs/day	54	NA	54	NA	82	54	NA
Exceeds Thresholds	No	NA	No	NA	No	No	NA

Notes: PM10 and PM2.5 thresholds are exhaust only. Exhaust PM10 is used to represent diesel particulate matter (DPM). There are not DPM emission associated with fugitive emissions.

Construction schedule is approximately 20.25 months, or ~446 work-days (22 days/month), average 260 days/yr.

Source: ADI CalEEMod analysis, July 2023.

As shown in Table 4.3-6, construction of the project would not generate VOCs, NO_x, SO_x, PM10 and PM2.5 emissions in excess of BAAQMD's numeric thresholds. The BAAQMD's CEQA Guidelines consider fugitive dust impacts to be less than significant through the application of best management practices (BMPs). Community health risks from construction activities are discussed in the Public Health section of this analysis.

Applicant Proposed Project Design Measure:

PD AIR-1.1: To ensure that fugitive dust and exhaust emissions impacts are less than significant, the project will implement the BAAQMD's recommended BMPs during the construction phase. These BMPs are incorporated into the design of the project and will include:

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

Operation

Operational emissions of NO_x, VOCs, CO, SO_2, PM10, PM2.5 and GHGs were evaluated. PM10 was used to represent DPM and was the only TAC considered to result from operation of the SVY03A. Detailed operation emission calculations are presented in Appendix AQ1. Primary operation emissions are a result of diesel fuel combustion from the standby diesel generators, offsite vehicle trips for worker commutes and material deliveries. Mitigated secondary operational emissions from facility upkeep, such as architectural coatings, consumer product use, landscaping, water use, waste generation, natural gas use for comfort heating, employee vehicle trips, and electricity use, were considered not significant.

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

Stationary Sources. The project's 28 standby diesel generators will be comprised of the following quantity and type of equipment:

- 26 – Caterpillar D3516E Diesel-fired engines, rated at 4,043 BHP (2750 kWe) at 100% Load
- 1 – Caterpillar C32 Diesel-fired engine, rated at 1,483 BHP (1000 kWe) at 100% Load
- 1 – Caterpillar 3512C Diesel-fired engine, rated at 2,400 BHP (1750 kWe) at 100% Load

The generators proposed for installation are made by Caterpillar, with a certified Tier 2 rating. These engines will be equipped with diesel particulate filters (DPF) to reduce the diesel particulates to less than or equal to 0.02 grams/brake horse-power hour (g/bhp-hr). The engines would also meet the BAAQMD BACT Policy guidance for engines rated at greater than 1000 bhp that are required to meet the EPA Tier 4 emissions standards. All generators would be operated routinely to ensure they would function during an emergency event. Appendix AQ1 presents the detailed emissions calculations for the proposed engines. Appendix AQ2 contains the manufacturers specification sheets for the engines, specifications and data on the proposed emissions control systems, and the latest EPA engine family certifications.

During routine maintenance and readiness (M&R) testing, criteria pollutants and TACs (as DPM) would be emitted directly from the generators. Criteria pollutant emissions from generator testing were quantified using information provided by the manufacturer, as specified in Appendix AQ1. SO2 emissions were based on the maximum sulfur content allowed in California diesel (15 parts per million by weight), and an assumed 100 percent conversion of fuel sulfur to SO_2. DPM emissions resulting from diesel stationary combustion were assumed equal to PM10 emissions. For conservative evaluation purposes, it was assumed that testing (weekly, monthly, quarterly, annual, and special testing) would occur for no more than 50 hours per year. 50 hours per year per engine is the limit specified by the Airborne Toxic Control Measure for Stationary Toxic Compression Ignition Engines (Title 17, Section 93115, CCR). However, it is the Applicant's experience that each engine will be operated for considerably less than 50 hours a year. Maintenance and readiness testing usually occurs at loads ranging from 10 to 100% load. For purposes of this application, the total emissions and modeled impacts were based upon the 100% load case (as explained below, engine load screening modeling was used to determine the engine load for the impact assessment. Tables AQ1-1 and AQ1-2 in Appendix AQ1 present the predicted emissions based upon operation at the 100% load point, number of engines tested, etc. Each of the engines were evaluated for the following emissions scenarios:

- Emergency Operations - Declared emergency operations, 100 hrs/yr, Tier 4 emissions factors, 100% load, with add-on controls including DPFs. (BAAQMD Policy limit.) These emissions are not subject to NSR applicability.
- Maintenance and Readiness Testing - Maintenance/Readiness operations, 50 hrs/yr, Tier 4 emissions factors supplemented by Tier 2 emissions factors to account for startup periods, 100% load, with add-on controls including DPFs. (ATCM limit.)

As noted above the engines will meet the EPA Tier 4 emissions standards through the use of add-on controls for NOx, CO, and VOC, and PM10/2.5.

The tables which follow present emissions summaries for the Caterpillar engines for each of the scenarios noted above in terms of the worst case hourly, daily, and annual emissions. Emergency operations are based on 24 D3516E engines, one C32 and one 3512C, each in operation, 24 hours per day, for 100 hours per year (while there are 26 D3516E engines, two (2) are used as redundant engines). M&R maximum hourly emissions are for a single D3516E engine test, while daily emissions are based on the assumption that no more than ten (10) of the D3516E engines will be tested on any day (and the engines will not be run or tested concurrently). Annual M&R testing emissions are based on all engines being tested for a maximum of 50 hours per year.

Table 4.3-7: Emergency Operations Emissions Summary for SVY03A Engines

Period	NO_x	CO	VOC	SO_2	PM10/2.5	CO_2e
			D3516E			
Max Hourly, lbs	106.96	556.19	29.95	1.07	4.28	-
Max Daily, lbs	2567.0	13348.6	718.8	25.7	102.7	-
Max Annual, tons	5.35	27.8	1.5	0.05	0.21	5171
			C32			
Max Hourly, lbs	1.64	8.5	0.46	0.02	0.065	-
Max Daily, lbs	39.2	204.1	10.99	0.39	1.57	-
Max Annual, tons	0.082	0.43	0.023	0.001	0.003	80
			3512C			
Max Hourly, lbs	2.65	13.76	0.74	0.03	0.106	-
Max Daily, lbs	63.49	330.17	17.78	0.63	2.54	-
Max Annual, tons	0.13	0.69	0.04	0.001	0.005	122.2

Scenario 1 - Declared emergency operations, 100 hrs/yr, Tier 4 emissions factors, 100% load, with add-on controls for 24 of the 26 engines.

Emissions from Scenario 1 are NOT subject to NSR applicability.

Table 4.3-8: Maintenance and Readiness Testing Emissions Summary for SVY03A Engines

Period	NO_x	CO	VOC	SO_2	PM10/2.5	CO_2e
			D3516E			
Max Hourly, lbs	13.59	23.2	1.25	0.045	0.178	-
Max Daily, lbs	135.9	231.7	12.5	0.446	1.783	-
Max Annual, tons	8.84	15.1	0.81	0.03	0.12	2801
			C32			
Max Hourly, lbs	4.99	8.5	0.458	0.016	0.065	-
Max Daily, lbs	4.99	8.5	0.458	0.016	0.065	-
Max Annual, tons	0.13	0.21	0.01	0.0004	0.002	40
			3512C			
Max Hourly, lbs	8.07	13.76	0.741	0.026	0.106	-
Max Daily, lbs	8.07	13.76	0.741	0.026	0.106	-
Max Annual, tons	0.20	0.34	0.02	0.001	0.003	61.1

Scenario 2 - Maintenance/Readiness operations, 50 hrs/yr, Tier 4 emissions factors, 100% load, with add-on controls.

Table 4.3-9 presents maximum daily and annual emissions data for the maintenance and readiness testing scenario in comparison to the BAAQMD CEQA significance thresholds.

Table 4.3-9: Maintenance and Readiness Testing Emissions and BAAQMD CEQA Significance Levels

Scenario	Lbs/Day					
	NO_x	**CO**	**VOC**	**SO_2**	**PM10**	**PM2.5**
BAAQMD CEQA Thresholds	54	NA	54	NA	82	54
Worst Case Daily Emissions[1]	**135.9**	231.7	12.5	0.446	1.78	1.34
Significance Threshold Exceeded	Yes	NA	No	NA	No	No
Scenario	**Tons/Yr**					
	NO_x	**CO**	**VOC**	**SO_2**	**PM10**	**PM2.5**
BAAQMD CEQA Thresholds	10	NA	10	NA	15	10
Worst Case Annual Emissions[2]	9.16	15.61	0.84	0.031	0.125	0.093
Significance Threshold Exceeded	No	NA	No	NA	No	No

Emissions represent the summation of the D3516E, C32, and 3512C engines for the periods defined.

[1] Based on the emissions from M&R testing for a 10-engine test day for the D3516E

[2] Based on the emissions from M&R testing for the 3 engine models at 50 hrs/yr for each engine.

The following should be noted with respect to Table 4.3-9 above.

1. NO_x emissions exceed the BAAQMD CEQA significance levels on the days when the 10-engine readiness tests occur, but not on a TPY basis (total emissions from all engines).
2. The emissions of NO_x will be mitigated through the participation in the BAAQMD ERC Bank, or other alternative methods as negotiated with the BAAQMD.

Table 4.3-10 presents the summation of emissions for all engines for the maximum of the scenarios noted above, i.e., M&R testing plus emergency operations to meet the 150 hours per year criteria per the BAAQMD permitting policy criteria.

Table 4.3-10 BAAQMD 150 Hour per Year Emissions Summation (tons per year)

Engines	NOx	CO	VOC	SO2	PM10	PM2.5
D3516E	14.18	42.87	2.31	0.082	0.330	0.330
C32	0.21	0.638	0.034	0.001	0.005	0.005
3512C	0.334	1.03	0.056	0.002	0.008	0.008
Totals	*14.72*	*44.54*	*2.40*	*0.085*	*0.343*	*0.343*
These values are NOT the NSR applicability values.						

Table 4.3-11 presents data on the DPM emissions levels (worst case) for each of the proposed engines.

Table 4.3-11: Toxic Air Contaminant (DPM) Emissions from the Proposed Engines For M&R Testing (per engine basis)

Scenario	D3516E	C32	3512C
Maximum Annual, lbs/yr	8.90	3.25	5.30
Maximum Hourly, lbs	0.178	0.065	0.106
Notes: DPM is the approved surrogate compound for diesel fuel combustion for purposes of health risk assessment. Annual emissions for each engine are based on the max allowed runtime of 50 hours per year.			

Table 4.3-12 presents the hourly and annual fuel use values for the maximum operational scenario as outlined above.

Table 4.3-12: Engine Fuel Use Values (M&R Testing)

Scenario and Engine Type	D3516C	C32	3512C
	Fuel Use, gallons (per engine basis)		
Maximum Annual, gals/yr	10,410	3,575	6,090
Maximum Hourly, gals/hr	192.9	71.5	109.4
Total Annual Fuel Use (All Engines)			
Annual Fuel Use, gals/yr *	259,815		
*assumes each engine runs at the maximum hours per year, at 100% load, and consumes fuel at the manufacturer's ratings.			

Fuel Storage and Evaporative Emissions Losses

Fuel storage (working and breathing losses) were calculated for the various fuel tanks proposed to be located on the site for the proposed engines. These calculations are presented in Appendix A, and summarized as follows (values are for all tanks):

- Total VOC emissions ~= 0.00686 tpy, 13.72 lbs/yr, 0.0376 lbs/day, 0.00157 lbs/hr

Emissions of the primary air toxics from fuel storage are as follows:

- Benzene – 0.00000605 tpy, or 0.0121 lbs/yr
- Toluene – 0.000033 tpy, or 0.066 lbs/yr
- Xylenes – 0.0000288 tpy, or 0.0575 lbs/yr

Emissions from Refrigerant Use

Refrigerant use was not provided at the time of this analysis and will be submitted under separate cover.

Miscellaneous Operational Emissions

Miscellaneous mitigated emissions from operational activities such as worker commute travel, deliveries, energy and fuel use for facility electrical, heating and cooling needs, periodic use of architectural coatings, landscaping, water use, waste generation, etc. were evaluated by CalEEMod. These emissions are presented in Table 4.3-13.

Table 4.3-13: Miscellaneous Mitigated Operational Emissions

			Lbs/Day			
Scenario	**NO_x**	**CO**	**VOC**	**SO_2**	**PM10**	**PM2.5**
BAAQMD CEQA Thresholds	54	NA	54	NA	82	54
All Sources Lbs/avg day	1.87	2.49	8.49	0.013	0.390	0.203
			TPY			
BAAQMD CEQA Thresholds	10	NA	10	NA	15	10
All Sources Tons/yr	0.341	0.4545	1.549	0.0023	0.0717	0.0370
Exceeds Thresholds	No	NA	No	NA	No	No

Note: assumes the data center is manned 365 days/yr.

All source category includes, mobile worker travel, deliveries, energy use, fuel use, waste disposal, water use, and misc area sources.

Fuel storage VOC vapor losses, and chiller refrigerant leakage losses were evaluated separately and reported herein.

Annual CO2e from Operations = 843.3 tons/yr., which is well below the BAAQMD significance threshold of 11,023 tons/yr (10,000 MT/yr).

Source: ADI CalEEMod analysis, July 2023.

Air Quality Impact Analysis

The 11.3-acre project site, located at 26203 Production Avenue in the City of Hayward (Alameda County), is currently developed with nine (9) commercial buildings and associated paved parking and loading areas, and landscaping (total of ~168,000 sq. ft.). The project proposes to demolish the existing improvements on the site and to construct three new buildings totaling ~ 336,136 square feet. The SVY03A buildings would house computer servers for private clients in a secure and environmentally controlled structure. The SVY03A is designed to provide approximately 76.6 megawatts (MW) of backup power on the hottest design day.

Modeling Overview

The evaluation of the potential air quality impacts and health risks were based on the estimate of the ambient air concentrations that could result from SVY03A air emission sources. This section discusses the selection of the dispersion model, the data that was used in the dispersion model (pollutants modeled with appropriate averaging times, source characterization, building downwash, terrain, and meteorology), etc.

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

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

Model Selection

To estimate ambient air concentrations, the latest version (version 22112) of the AERMOD dispersion model was used. AERMOD is appropriate for use in estimating ground-level short-term ambient air concentrations resulting from non-reactive buoyant emissions from sources located in simple, intermediate, and complex terrain. AERMOD is the preferred guideline model recommended by USEPA for these types of assessments and is based on conservative assumptions

(i.e., the model tends to over-predict actual impacts by assuming steady state conditions, no pollutant loss through conservation of mass, no chemical reactions, etc.). AERMOD is capable of assessing impacts from a variety of source types such as point, area, line, and volume sources (as noted above, point source types are used to model stack sources like the SVY03A engine emissions); downwash effects; gradual plume rise as a function of downwind distance; time-dependent exponential decay of pollutants; and can account for settling and dry deposition of particulates (all SVY03A emissions were conservatively modeled as non-reactive gaseous emissions). The model is capable of estimating concentrations for a wide range of averaging times (from one hour to the entire period of meteorological data provided).

AERMOD calculates ambient concentrations in areas of simple terrain (receptor base elevations below the stack release heights), intermediate terrain (receptor base elevations between stack release and final plume height), and complex terrain (receptor base elevations above final plume height). AERMOD assesses these impacts for all meteorological conditions, including those that would limit the amount of final plume rise. Plume impaction on elevated terrain, such as on the slope of a nearby hill, can cause high ground level concentrations, especially under stable atmospheric conditions. Due to the relatively flat nature of the SVY03A project terrain area, including the surrounding properties, plume impaction effects would not be expected to occur. AERMOD also considers receptors located above the receptor base elevation, called flagpole receptors.

Another dispersion condition that can cause high ground level pollutant concentrations is caused by building downwash. Building downwash can occur during high wind speeds or a building or structure is in close proximity to the emission source. This can result in building wake effects where the plume is drawn down toward the ground by the lower pressure region that exists in the lee side (downwind) of the building or structure. This AERMOD feature was also used in modeling the SVY03A emission sources as described later.

Model Input Options

Model options refer to user selections that account for conditions specific to the area being modeled or to the emissions source that needs to be examined. Examples of model options selected for this analysis includes the use of downwash and the urban dispersion option.

Land use in the immediate area surrounding the project site is characterized as “urban” utilizing the approach by Auer. Here, land uses within the area circumscribed by a three (3) km radius around the project site is greater than 50 percent urban. This is consistent with the current land use and zoning designation for the site and surrounding area, which are classified as “commercial, and light and heavy industrial”. Therefore, in the modeling analyses, the urban dispersion option was selected.

The AERMOD Implementation Guide (June 2022) provides the following recommendations for assigning an urban population number in AERMOD.

> *For urban areas adjacent to or near other urban areas, or part of urban corridors, the user should attempt to identify that part of the urban area that will contribute to the urban heat*

island plume affecting the source(s). If this approach results in the identification of clearly defined MSAs, then census data may be used as above to determine the appropriate population for input to AERMOD. Use of population based on the Consolidated MSA (CMSA) for applications within urban corridors is not recommended, since this may tend to overstate the urban heat island effect. Similarly, for application sites that are in isolated areas of dense population but are not representative of the larger MSA, care should be taken to determine the extent of the area the urban area that will contribute to the urban heat island plume affecting the source(s).

For situations where MSAs cannot be clearly identified, the user may determine the extent of the area, including the source(s) of interest, where the population density exceeds 750 people per square kilometer. The combined population within this identified area may then be used for input to the AERMOD model.

Dispersion within urban environments has different characteristics than that occurring in a rural environment. The urban boundary layer will behave in a more convective, turbulent manner during the hours just after sunset due to the urban heat island effect. Based on the Implementation Guide, the population was based on the City of Hayward 2020 census data at 156,754.

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

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

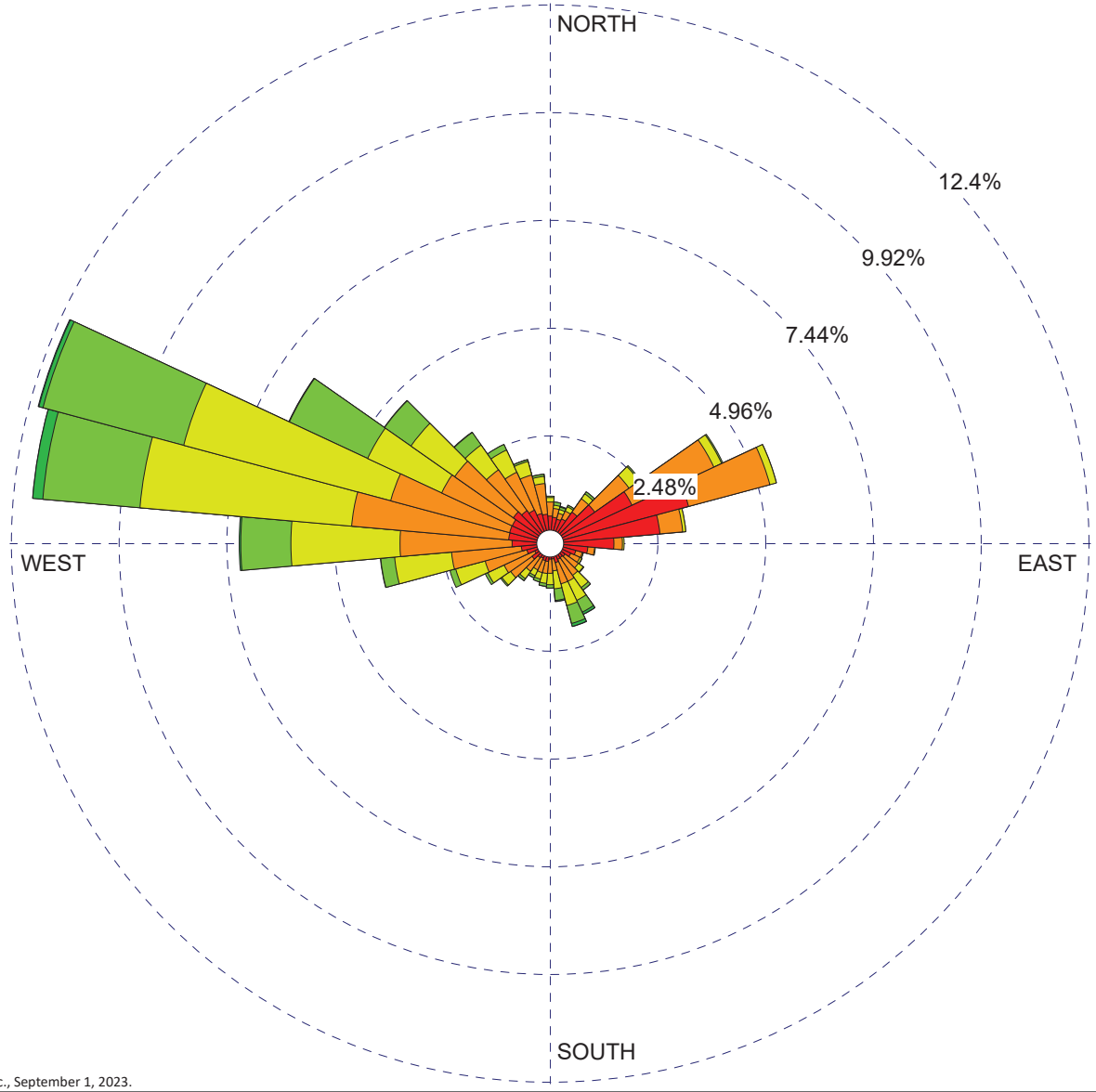
Calculation of chemical concentrations for use in the impact and exposure analysis requires the selection of appropriate concentration averaging times. Average pollutant concentrations ranging from one (1) hour to annual based on the meteorological data were calculated for each SVY03A source and the facility in total.

Meteorological Data

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

AERMOD uses hourly meteorological data to characterize plume dispersion. AERMOD calculates the dispersion conditions for each hour of meteorological data for the emission sources modeled at the user-specific receptor locations. The resulting 1-hour impacts are then averaged by AERMOD for the averaging time(s) specified by the user (accounting for calm winds and missing meteorological data as specified in the model options). Meteorological data from the Hayward Executive Airport were provided by the BAAQMD for the five years of 2013 through 2017, inclusive. The representativeness of the meteorological data is dependent on the proximity of the meteorological monitoring site to the area under consideration; the complexity of the terrain, the exposure of the meteorological monitoring site, and the period of time during which the data are collected. The data was collected approximately three (3) kilometers from the northern edge of the SVY03A project boundary and were provided by BAAQMD as the most appropriate meteorological data for this modeling analysis. The data were processed by BAAQMD with AERMET (version 18081), AERMOD's meteorological data preprocessor module.

The BAAQMD SVY03A meteorological data consists of surface measurements including wind speed, wind direction, temperature, and solar radiation, which were combined with National Weather Service upper air data from the Oakland International Airport. The USEPA-recommended 90% completeness criteria are met for all modeled parameters in the BAAQMD meteorological data. Figure 4.3-1 is the five (5) year annual wind rose.



Source: Atmospheric Dynamics, Inc., September 1, 2023.

HAYWARD EXECUTIVE AIRPORT METEOROLOGICAL DATA WIND ROSE

FIGURE 4.3-1

Building and Receptors

The effects of building downwash on facility emissions were included in the modeling assessment. The **P**lume **Ri**se **M**odel **E**nhancements to the USEPA **B**uilding **P**rofile **I**nput **P**rogram (BPIP-PRIME, version 04274) was used to determine the direction-specific building downwash parameters. The PRIME enhancements in AERMOD calculate fields of turbulence intensity, wind speed, and slopes of the mean streamlines as a function of projected building shape. Using a numerical plume rise model, the PRIME enhancements in AERMOD determine the change in plume centerline location and the rate of plume dispersion with downwind distance. Concentrations are then predicted by AERMOD in both the near and far wake regions, with the plume mass captured by the near wake treated separately from the uncaptured primary plume and re-emitted to the far wake as a volume source. Figure 4.3-2 presents the building data used in the downwash analysis.

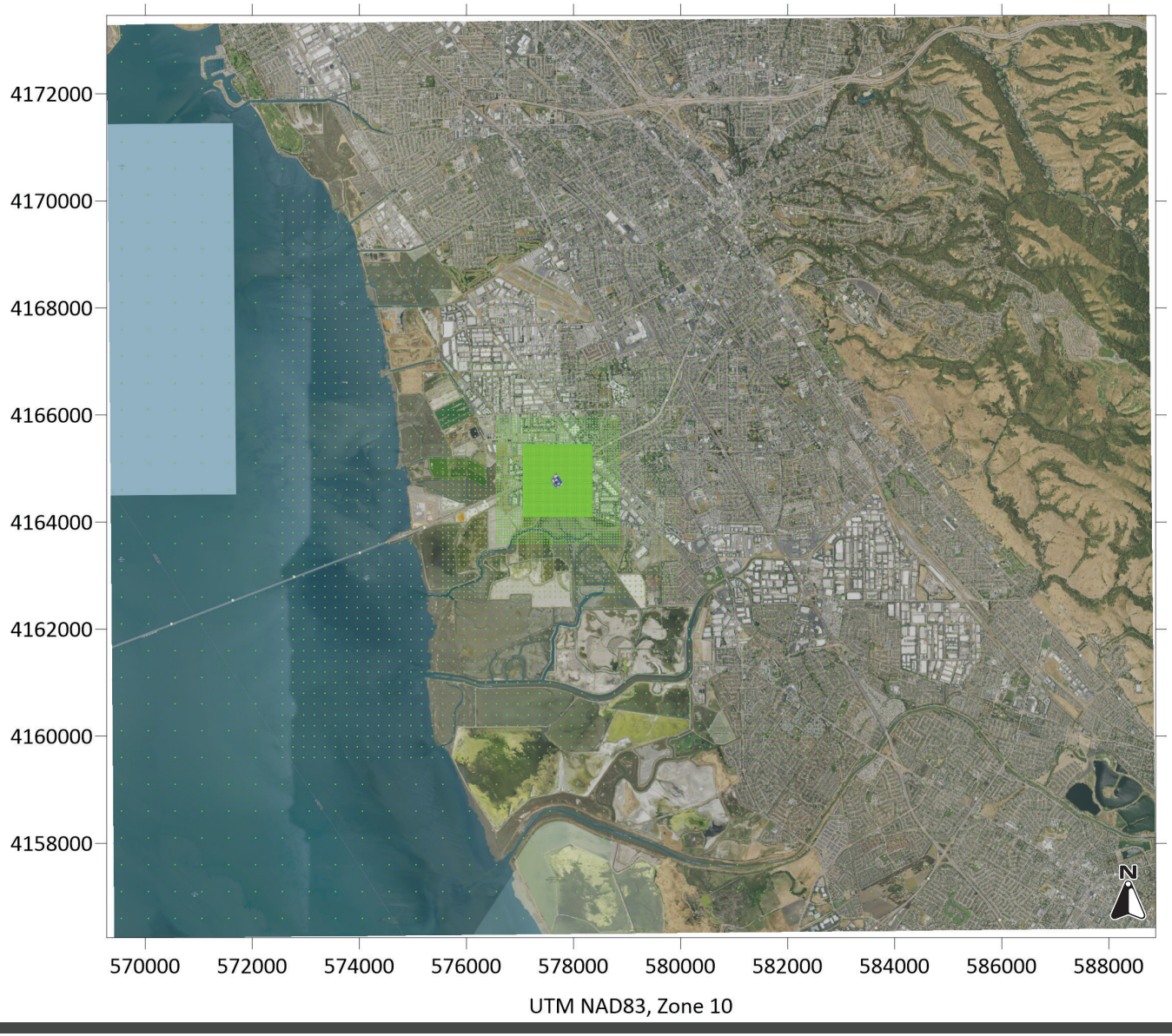
Receptor grids were generated along the fence line (≤20 meter spacing), 20 meter spacing from the fence line to 500 meters from the facility, 50 meter spacing out to one (1) kilometer (km), 100 meter spacing out to two (2) km from the facility, 200 meter spacing out to five (5) km and then 500 meter spacing out to eight (8) km from the facility. All receptor and source locations are referenced in meters using the Universal Transverse Mercator (UTM) Cartesian coordinate system based on the North American Datum of 1983 (NAD83) for Zone 10. Figure 4.3-3 presents the receptor grid used in the modeling analysis.

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

Source Data – Modeling Inputs

Emissions and stack parameters for the 33 Cummins diesel engines are presented in Appendix AQ-1 and AQ-3 and were used to develop the modeling inputs. Stack parameters (e.g., stack height, exit temperature, stack diameter, and stack exit velocity) were based on the parameters given by the engine manufacturer and the Applicant. Stack locations for the proposed sources were matched to show their actual location based on the proposed facility plot plan. Appendix AQ-3 presents the locations of the SVY03A sources, and the building outlines considered in the downwash analysis. Stack base elevations were given a common base elevation based on the range of elevations calculated with AERMAP for the stack locations.

MODELED BUILDING HEIGHTS AND STACK LOCATIONS | FIGURE 4.3-2



MODELED RECEPTOR GRIDS

FIGURE 4.3-3

Impact Analysis Summary

Operational characteristics of the diesel engines, such as emission rate, exit velocity, and exit temperature, vary by operating loads. The engines could be operated over engine load conditions ranging from 40 to 100 percent load, which represents the range of loads where the selective catalytic reduction (SCR) is effective at controlling the emissions of NO_x by 90 percent or greater. At lower loads, the exhaust temperatures may not be high enough to control NO_x at this level. Thus, an air quality screening analysis was performed that considered these effects to determine the worst-case engine load scenario to include in the refined modeling analyses. The load analysis was only performed for the 1-hour NO_x averaging period with the results identifying that the 100 percent load case for each engine type always produced the maximum 1-hour concentration. These results are provided in Appendix AQ-3. For all other criteria pollutants, including toxics, the engines were modeled for the 100% load case, with a source group for each individual engine (only one engine will be tested at any one time). The engines were assumed to be tested anytime from 7 AM to 5 PM (controlled using the EMISFACT/HROFDY model option). Although each of the engines will typically only be tested individually for up to one hour at any one time, each engine was assumed to operate up to 10 hours/day (7AM-5PM) to conservatively represent 10 different engines operating one hour each in any one day for 3-hour, 8-hour, and 24-hour averaging times. Thus, the worst-case engine location could be determined from this modeling analysis. For annual averaging periods, all 28 engines were assumed to run 50 hours per year, utilizing the emissions and stack parameters associated with 100 percent load.

Based on the results of the modeling analyses, all SVY03A sources were summarized for comparisons with the applicable CAAQS and NAAQS. Since the engines will each be tested at no more than 50 hours/year (limited by the California Air Resources Board Air Toxics Control Measure regulation), the annual average emission rate was included in the 1-hour NO_2 and SO_2 NAAQS modeling analyses at the annual average emission rates per EPA guidance due to the statistical nature of these standards. The engines were modeled at the maximum emission rate(s) for the applicable CAAQS and NAAQS.

NO_2 impacts were assessed using a conservative Tier 2 analysis using the Ambient Ratio Method Version 2 (ARM2), adopted in the *Guidance Concerning the Implementation of the 1-hour NO_2 NAAQS for the PSD Program" (6/29/10)*. ARM2 adjusts the modeled NO_x concentrations based on an empirical relationship between ambient NO_x and ambient NO_2 concentrations. ARM2 was also used for the intermittent source operations modeling using the EPA annualized emissions methodology for comparisons with the federal 1-hour standard (98^{th} percentile). The modeled NO_2 concentrations were then added to the highest background NO_2 monitoring data over the last three years. Monitored hourly or seasonal hour by day background NO_2 data was not utilized in this analysis.

Based on the results of the NO_2 load screening and refined modeling analyses, the modeled concentrations are presented in Table 4.3-14.

Table 4.3-14: Modeled Operational Concentrations and Ambient Air Quality Standards

Pollutant	Averaging Period	Maximum Concentration (µg/m³)	Background (µg/m³)	Total (µg/m³)	Ambient Air Quality Standards (µg/m³)	
					CAAQS	NAAQS
3-/8-/24-Hour Maxima shown for one engine operating up to 10 hours/day (7AM-5PM)						
NO_2	1-hour maximum	138.72*	111.4	250.12	339	-
	3-year average of 1-hour yearly 98th %	1.59*	71.6	73.19	-	188
	3-year maximum value of the AAM	3.78	16.9	20.68	57	100
CO	1-hour maximum	408.22*	2,176	2,584.2	23,000	40,000
	8-hour maximum	122.59	1,904	2,026.6	10,000	10,000
SO_2	1-hour maximum	0.78*	40.3	41.08	655	-
	3-year average of 1-hour yearly 99th %	0.51*	11.3	11.81	-	196
	24-hour maximum	0.11	6.5	6.61	105	365
	3-year maximum AAM	0.012	0.71	0.72	-	80
PM10	24-hour maximum (CAAQS)	0.49	134	**134.49**	50	150
	3-year maximum AAM (CAAQS)	0.05	58	**58.05**	20	-
PM2.5	3-year average of 24-hour yearly 98th %	0.42	46.7	**47.12**	35	35
	3-year weighted average (NAAQS)	0.05	10.4	10.45	12.0	12.0

*1-hour NO_2 impacts evaluated with ARM2 with the maximum 1-hour impact from the Cat 3512C engine.

All modeled concentrations are less than the applicable standards, with the exception of PM10 and PM2.5, where the background already exceeds the standards (background PM10 24-hour concentration data is less than the NAAQS). When background exceeds the standards, the project must demonstrate that it does not contribute to the exceedance of the standard(s). For both PM10 and PM2.5, the project's 24-hour and annual modeled concentrations are less than the applicable significant impact levels (SILs) of 5 and 1 *u*g/m^3 for PM10 and 0.2 and 1.2 *u*g/m^3 for PM2.5. Thus, the project will not contribute to the exceedances of the standards.

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose health risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to PM2.5. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at the nearest residences from construction emissions of DPM and PM2.5.[11] The closest sensitive receptors to the project site are residences located 2,985 feet north-northwest of the project boundary (refer to Table 4.3-16 below). Emissions and dispersion modeling

were conducted to predict the off-site concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

In addition, during excavation, grading, and some building construction activities, substantial amounts of dust could be generated. Most of the dust would result during grading activities. The amount of dust generated would be highly variable and would be dependent on the size of the area disturbed at any given time, amount of activity, soil conditions, and meteorological conditions. To address fugitive dust emissions that lead to elevated PM10 and PM2.5 levels near construction sites, the BAAQMD CEQA Air Quality Guidelines identify best management practices. Once included in construction projects, these impacts will be considered less than significant. In addition, diesel emissions from construction related equipment will temporarily result in an increase in health risk to nearby offsite receptors.

For modeling fugitive PM10 and PM2.5 emissions, a near-ground level release height of 0.5 meters (1.6 feet) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area source. To represent the construction equipment exhaust emissions, 105 equally spaced (20 meter) point sources were placed within the area of construction activity. Each point source had an emission release height of 3.05 meters (10 feet). The exit temperature and stack velocity were based on an average sized construction engine that could be used for the project. Construction emissions were modeled as occurring daily between 7 a.m. to 5 p.m., when the majority of construction activity would occur. Figure 4.3-4 displays the point and area source locations used in the modeling analysis.

Table 4.3-15: Modeled Construction Concentrations and Ambient Air Quality Standards

Pollutant	Averaging Period	Maximum Concentration (µg/m³)	Background (µg/m³)	Total (µg/m³)	Ambient Air Quality Standards (µg/m³)	
					CAAQS	NAAQS
Construction occurs for up to 10 hours/day (7AM-5PM)						
NO_2*	1-hour maximum (CAAQS)	4.15	111.4	116.9	339	-
	3-year average of 1-hour yearly 98th % (NAAQS)	3.18	71.6	74.78	-	188
	Annual maximum	0.28	16.9	17.18	57	100
CO	1-hour maximum	26.42	2,176	2,202.4	23,000	40,000
	8-hour maximum	13.14	1,904	1,917.1	10,000	10,000
SO_2	1-hour maximum (CAAQS)	0.058	40.3	40.36	655	-
	3-year average of 1-hour yearly 99th % (NAAQS)	0.049	11.3	11.35	-	196
	24-hour maximum	0.014	6.5	6.51	105	365
	Annual maximum	0.004	0.71	0.71	-	80
PM10	24-hour maximum (CAAQS)	14.19	134	148.19	**50**	150
	Annual maximum (CAAQS)	2.77	58	60.77	**20**	-
PM2.5	3-year average of 24-hour yearly 98th %	1.96	46.7	48.66	35	35
	3-year average of annual concentrations (NAAQS)	0.68	10.4	11.08	12.0	12.0

*1-hour NO_2 impacts evaluated with Ambient Ratio Method #2 (ARM2).

CONSTRUCTION MODELED POINT AND AREA SOURCE LOCATIONS

FIGURE 4.3-4

Based on the modeling results in Table 4.3-15, the combined modeled plus background concentrations that are greater than the CAAQS are for the 24-hour PM10 and PM2.5 averaging periods and the annual PM10 averaging period, due solely to the monitored background concentrations which already exceed the CAAQS. The maximum modeled impacts for PM10 and PM2.5 are primarily related to the fugitive dust emissions. The modeled combustion emissions for PM10 and PM2.5 are all less than the applicable significant impact levels for both 24-hour and annual averaging periods and will comply with the BAAQMD annual PM2.5 SIL of 0.3 *u*g/m^3. Application of the CEC construction requirements will mitigate the fugitive dust emissions to a level of insignificance. Based on the application of CEC construction requirements, the project will comply with the ambient air quality standards. The air quality modeling support data, including the input/output and meteorological data sets, will be submitted to Staff electronically.

Public Health and Health Risk Assessment

This section presents the methodology and results of a human health risk assessment performed to assess potential impacts and public exposure associated with airborne emissions from the routine operation of the SVY03A project.

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

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

Affected Environment

Sensitive receptors are defined as groups of individuals that may be more susceptible to health risks due to chemical exposure. Schools (public and private), day care facilities, convalescent homes, and hospitals are of particular concern. The nearest sensitive receptors, by type, are listed in Table 4.3-16. Appendix AQ5 contains support materials for the facility health risk assessment, such as; a listing of sensitive receptors within the facility regional area, etc. HAPs emissions evaluations are presented in Appendix AQ1.

Table 4.3-16: Sensitive Receptors Nearfield of the SVY03A Site

Receptor Type	UTM Coordinates (NAD 83, Zone 10)	Distance from Site, ft.	Elevation, AMSL ft.
Nearest Residence	578686, 4164999	2,985	23
Nearest Hospital (Saint Rose)	580477, 4165496	9,560	44
Nearest School (Eden Gardens ES)	578636, 4165807	4,595	31
Nearest Pre-School (Sunny Day)	579197, 4165917	6,242	37
Google Earth image dated: 7/8/22			

The nearest residences are located to the southeast, east, and northeast of the site at distances starting at approximately 2,985 feet.

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

Overburdened Community

The project is located within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0, as having an overall CalEnviroScreen score at or above the 70th percentile. Specifically, the project is located in Census Tract 6001437101 which has a CE4.0 rating of 74 percentile, which places the project in an overburdened community. These are designated communities that are overburdened by air pollution and other health disparities.

The Air District limits the excess lifetime cancer risk to 10 in one million as the maximum risk, meaning that a higher risk is deemed unacceptable on a project basis. Recent amendments to the BAAQMD Regulation 2-5 have limited the cancer risk to 6 in one million for designated overburdened communities. At this time, the BAAQMD has not proposed to change the CEQA cancer risk threshold to align with amendments made in Regulation 2-5. However, as noted in the risk assessment below, the 6 in a one million risk threshold was used for both worker and sensitive (residential) receptors. A hazard and chronic index of 1.0 is the target threshold for all areas and was not revised for overburdened communities.

Cancer Risk

Cancer risk is the probability or chance of contracting cancer over a period of time normally defined as either 30 or 70-years depending on the project type and agency risk procedures. Carcinogens are not assumed to have a threshold below which there would be no human health impact. In other words, any exposure to a carcinogen is assumed to have some probability of causing cancer; the lower the exposure, the lower the cancer risk (i.e., a linear, no-threshold model). Under local regulations, an incremental cancer risk greater than 6 in one million due to a project is considered to be a significant impact on public health.

Non-Cancer Risk

Non-cancer health effects can be either chronic or acute. In determining potential non-cancer health risks (chronic and acute) from air toxics, it is assumed there is a dose of the chemical of concern below which there would be no impact on human health. The air concentration corresponding to this dose is called the Reference Exposure Level (REL). Non-cancer health risks are measured in terms of a hazard quotient, which is the calculated exposure of each contaminant divided by its REL. Hazard quotients for pollutants affecting the same target organ are typically summed with the resulting totals expressed as hazard indices for each organ system. A hazard index of less than 1.0 is considered to be an insignificant health risk. For this health risk assessment, all hazard quotients were summed regardless of target organ. This method leads to a conservative (upper bound) assessment. RELs used in the hazard index calculations were those published in the CARB/OEHHA listings dated September 2019.

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

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

Receptor Types

The following receptor descriptors are used herein:

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

Construction and Operational Phase Impacts

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

Emissions of criteria pollutants will adhere to NAAQS or CAAQS as discussed in the Ambient Air Quality section. The proposed facility emergency electrical backup engines will be either certified or compliant Tier 4 units and as such, they meet the BACT requirements of the BAAQMD. These engines are equipped with DPFs. Finally, air dispersion modeling results show that emissions will not result in concentrations of criteria pollutants in air that exceed ambient air quality standards (either NAAQS or CAAQS). These standards are intended to protect the general public with a wide margin of safety. Therefore, the project is not anticipated to have a significant impact on public health from emissions of criteria pollutants.

Potential impacts associated with emissions of toxic pollutants to the air from the proposed facility were addressed in a health risk assessment, with support data presented in Appendix AQ5. The risk assessment was prepared using guidelines developed by OEHHA and CARB, as implemented in the latest version of the HARP model (ADMRT 22118). The BAAQMD risk assessment options in HARP were used for all analyses (BAAQMD 2016).

Public Health Impact Study Methods

Emissions of toxic pollutants potentially associated with the facility were estimated using emission factors for PM10 derived from compliance with the EPA Tier 4 emissions standards for the 100% load case for all engine types. All emitted PM10 was assumed to equal diesel particulate matter (DPM) which is the approved surrogate for the cumulative toxics emitted from diesel fired engines.

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

Health risks were evaluated for a hypothetical maximum exposed individual (MEI) located at the MIR (maximum impact receptor) for the following scenarios:

- **Scenario 1** assumed that all receptors on the modeling grid represented residential or sensitive receptors. If the cancer risk and chronic HI at the MIR were below the significance thresholds as established by the BAAQMD, then the MEIR/MEIS risks would be less than significant as well at all other receptors on the grid.
- **Scenario 2** assumed that all receptors on the modeling grid represented worker receptors. If the cancer risk and chronic HI at the MIR were below the significance thresholds as established by the BAAQMD, then the MEIW risks would be less than significant as well at all other receptors on the grid.

Health risks potentially associated with concentrations of carcinogenic pollutants in air were calculated as estimated excess lifetime cancer risks. The excess lifetime cancer risk for a pollutant is estimated as the product of the concentration in air and a unit risk value. The unit risk value is defined as the estimated probability of a person contracting cancer as a result of constant exposure to an ambient concentration of 1 $\mu g/m^3$ over a 30-year time period. In other words, it represents the increased cancer risk associated with continuous exposure to a concentration in air over a pre-defined period. Evaluation of potential non-cancer health effects from exposure to short-term and long-term concentrations in air was performed by comparing modeled concentrations in air with the RELs. An REL is a concentration in air at or below which no adverse health effects are anticipated. RELs are based on the most sensitive adverse effects reported in the medical and toxicological literature. Potential non-cancer effects were evaluated by calculating a ratio of the modeled concentration in air and the REL. This ratio is referred to as a hazard quotient. The unit risk values and RELs used to characterize health risks associated with modeled concentrations in air were obtained from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* (CARB 9/2019) and are presented in Table 4.3-17.

Table 4.3-17: Toxicity Values Used to Characterize Health Risks

TAC	Unit Risk Factor (μg/m3)-1	Chronic Reference Exposure Level (μg/m3)	Acute Reference Exposure Level (μg/m3)
DPM	.0003	5	--

Source: CARB/OEHHA, 9/2019.

Table 4.3-18 delineates the maximum hourly and annual emissions of the identified air toxic pollutants (DPM) from the emergency backup engines during the routine testing of the engines. Table 4.3-6, presented above, summarizes the construction DPM emissions (shown as PM exhaust emissions).

Table 4.3-18: Maximum SVY03A Hourly, Daily, and Annual Air Toxic Emissions M&R Testing Scenario

Emergency Standby Engines (per engine basis for maximum hour emissions)				
Engine Model	**Toxic**	**Max Hour Emissions, Lbs**	**Max Daily Emissions, Lbs**	**Max Annual Emissions Lbs**
D3516E	DPM	0.178	1.783	231.4
C32	DPM	0.065	0.065	3.25
3512C	DPM	0.106	0.106	5.30

Note: Engines are equipped with diesel particulate filters.

Characterization Of Risks From Toxic Air Pollutants

Based on the HARP modeling results for both construction and routine operations, the excess lifetime cancer risks and chronic hazard index are all less than the health risk significance thresholds presented below in Table 4.3-19. Excess lifetime cancer risks less than 10×10^{-6}, for sources with T-BACT (use of a DPF), are unlikely to represent significant public health impacts that require additional controls of facility emissions. Risks higher than one in one million may or may not be of concern, depending upon several factors. These include the conservatism of assumptions used in risk estimation, size of the potentially exposed population and toxicity of the risk-driving chemicals.

Risks associated with pollutants potentially emitted from the facility during construction and operations are presented in Tables 4.3-20 through 4.3-22. The cancer risks are all below 10 in a million and the chronic hazard indices for all scenarios are well below 1.0. The one-in-one-million-risk isopleth is presented in Figure 4.3-5. It should be noted that DPM does not currently have an acute hazard index value, and as such, acute health effects were not evaluated in the HRA. Further description of the methodology used to calculate health risks associated with emissions to the air can be found in the HARP User's Manual dated 12/2003 and the ADMRT Manual dated 3/2015 (CARB 2015). As described previously, human health risks associated with emissions from the proposed facility are unlikely to be higher at any other location than at the location of the MIR. If there is no significant impact associated with concentrations in air at the MIR location, it is unlikely that there would be significant impacts in any other location in the vicinity of the facility for both the residential and worker exposure scenarios.

CONSTRUCTION ONE-IN-ONE-MILLION CANCER RISK ISOPLETH | FIGURE 4.3-5

Table 4.3-19: Health Risk Significance Thresholds

Risk Category	Significance Thresholds		
	BAAQMD Project Risk	**BAAQMD Net Project Risk**	**State of California**
Cancer Risk	6 in one million	6 in one million	<= 1 in a million w/o TBACT <=10 in a million w/TBACT
Chronic Hazard Index	1.0	1.0	1.0
Acute Hazard Index	1.0	1.0	1.0
Cancer (T-BACT required)	>1 in a million Chronic HI > 0.20		See above.
Cancer Burden	NA		1.0

Source: Regulation 2 Rule 5, NSR for Toxic Air Contaminants for an overburdened community

Table 4.3-20: SVY03A Construction Health Risk Assessment Summary

Location	Receptor #	UTM (meters)	Cancer Risk	Chronic HI	Acute HI	Cancer Burden
PMI	33	577823.5, 4164720.0	1.63 in one million	1.13E-03	-	NA
MEIR	3489	578960.0, 4164700.0	0.0523 in one million	3.6E-05	-	NA
MEIS	3071	578636.0, 4165807.0	0.00582 in one million	4.00E-06	-	NA
MEIW	7688	577860.0, 4164700.0	0.0824 in one million	1.04E-03	-	NA

Notes: See acronym definitions above.

The PMI noted above is located on the southeast fence line.

DPM is the surrogate compound for construction equipment diesel exhaust. No acute REL has been established for DPM.

20.5-month construction period (HRA used 2 years as a conservative exposure period.)

FAH=1 for all age groups from 3rd trimester to 16 years, for MEIR and MEIS.

FAH not used for MEIW.

MEIS – Eden Gardens Elementary School

These values are well below the significance thresholds for construction health risk impacts, and as such the community risk impacts from construction activities would be *less than significant*.

Table 4.3-21: SVY03A Operational Residential Health Risk Assessment Summary

Location	Receptor #	UTM (meters)	Cancer Risk	Chronic HI	Acute HI	Cancer Burden
PMI	30	577790.7, 4164770	35.1 in one million	9.44E-03	-	NA
MEIR	3489	578960.0, 4164700.0	1.22 in one million	3.28E-04	-	NA
MEIS	3071	578636.0, 4165807.0	0.0966 in one million	2.60E-05	-	NA

Notes: See acronym definitions above.

The PMI noted above is located on the eastern fence line and is not a residential receptor.

MEIS – Eden Gardens Elementary School

Table 4.3-22: SVY03A Operational Worker Health Risk Assessment Summary

Location	Receptor #	UTM	Cancer Risk	Chronic HI	Acute HI	Cancer Burden
PMI	30	577790.7, 4164770.0	0.853 in one million	9.44E-03	-	NA
MEIW	7751	577840.0, 4164800.0	0.526 in one million	5.83E-03	-	NA

Notes: See acronym definitions above.

The PMI noted above is located at the easterly fence line and does not represent a worker or residential receptor.

Cancer risks potentially associated with facility emissions also were not assessed in terms of cancer burden. Cancer burden is a hypothetical upper-bound estimate of the additional number of cancer cases that could be associated with emissions from the facility. Cancer burden is calculated as the worst-case product of excess lifetime cancer risk, at the one (1) in a million isopleth and the number of individuals at that risk level. Cancer burden evaluations are not required by the BAAQMD.
The chronic non-cancer hazard quotient associated with air concentrations are shown in Tables 4.3-20 through 4.3-22. The chronic non-cancer hazard quotient for all target organs fall below 1.0. As described previously, a hazard quotient less than 1.0 is unlikely to represent significant impact to public health. Since DPM does not have an acute REL, no acute hazard index or quotient was calculated. As described previously, human health risks associated with emissions from the proposed facility are unlikely to be higher at any other location than at the location of the MIR. If there is no significant impact associated with concentrations in air at the MIR location, it is unlikely that there would be significant impacts in any other location in the vicinity of the facility for both residential and worker exposure scenarios.

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

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

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

The estimated lifetime cancer risks to the maximally exposed individual located at the SVY03A MIR does not exceed the 10 in one million significance level for T-BACT sources. These engines are EPA certified Tier 4 units equipped with diesel particulate filters, and are used only for emergency power backup, therefore BACT or T-BACT for DPM is satisfied. The chronic hazard index value is also well below the significance threshold of 1.0. These risk estimates were calculated using assumptions that are highly health conservative. Evaluation of the risks associated with the SVY03A emissions should consider that the conservatism in the assumptions and methods used in risk estimation considerably over-state the risks from SVY03A emissions. Based on the results of this risk assessment, there are no significant public health impacts anticipated from emissions of toxic pollutant to the air from the SVY03A.

Operation Odors

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

Summary of Impacts

The health risk assessment for the SVY03A indicates that the maximum cancer risk will be less than the applicable significance thresholds of six in one million with T-BACT at the maximum worker or sensitive (residential or school) receptor from the exposure to air toxics from SVY03A emissions, during both construction and operation. This risk level is considered to be not significant. Non-cancer chronic effects for all scenarios are well below the chronic hazard index significance value of 1.0.

Results from an air toxics risk assessment based on emissions modeling indicate that there will be no significant incremental public health risks from the construction and operation of the SVY03A. Results from criteria pollutant modeling for routine operations indicate that potential ambient concentrations of NO_2, CO, SO_2, PM10 and PM2.5 will not significantly impact air quality. Potential concentrations are below the federal and California standards established to protect public health, including the more sensitive members of the population.

Cumulative Impacts

When provided by the BAAQMD, a cumulative air quality and public health risk assessment will be prepared and submitted under separate cover.

4.4 Biological Resources

The discussion in this section is based, in part, on the results of a Biological Resources Constraints Memorandum prepared by WRA, Inc. in August 2023 and an Arborist Report prepared by Kielty Arborist Services, LLC in July 2023. These reports are included as Appendix B and Appendix C to this SPPE Application, respectively.

4.4.1 Environmental Setting

4.4.1.1 *Regulatory Framework*

Federal and State

Endangered Species Act

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

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

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits killing, capture, possession, or trade of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. Hunting and poaching are also prohibited. This includes direct and indirect acts, except for harassment and habitat modification, which are not included unless they result in direct loss of birds, nests, or eggs. The CDFW also protects migratory and nesting birds under California Fish and Game Code Sections 3503, 3503.5, and 3800. The CDFW defines taking as causing abandonment and/or loss of reproductive efforts through disturbance.

Sensitive Habitat Regulations

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

Fish and Game Code Section 1602

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

Regional and Local

Hayward 2040 General Plan

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

Policy	Description
M-3.11	Adequate Street Tree Canopy. The City shall ensure that all new roadway projects and major reconstruction projects provide for the development of an adequate street tree canopy.
HQL-8.1	Manage and Enhance Urban Forest. The City shall manage and enhance the urban forest by planting new trees, ensuring that new developments have sufficient right-of-way width for tree plantings, managing and caring for all publicly owned trees, and working to retain healthy trees.
HQL-8.3	Trees of Significance. The City shall require the retention of trees of significance (such as heritage trees) by promoting stewardship and ensuring that project design provides for the retention of these trees wherever possible. Where tree removal cannot be avoided, the City shall require tree replacement or suitable mitigation
NR-1.1	The City shall limit or avoid new development that encroaches into important native wildlife habitats; limits the range of listed or protected species; or creates barriers that cut off access to food, water, or shelter of listed or protected species.
NR-1.3	The City shall require qualified biologists to identify, map, and make recommendations for avoiding all sensitive biological resources on the project site, including State and Federally sensitive, rare, threatened, and endangered plant, fish, and wildlife species and their habitats using methods and protocols in accordance with the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Native Plant Society for all development applications proposed within sensitive biological resource areas.
NR-1.7	The City shall encourage protection of mature, native tree species to the maximum extent practicable, to support the local eco-system, provide shade, create windbreaks, and enhance the aesthetics of new or existing development.

Hayward Tree Preservation Ordinance

The Hayward Tree Preservation Ordinance (Article 10.15 of the HMC) is intended to protect and preserve significant trees and control the re-shaping, removal, or relocation of those trees. Protected Trees are defined as any of the following: 1) trees that have a minimum trunk diameter of eight inches measured 54 inches above the ground; 2) street trees or other required trees such as those required as a condition of approval, Use Permit, or other Zoning requirement, regardless of size; 3) all memorial trees dedicated by an entity recognized by the City, and all specimen trees that define a neighborhood or community; 4) specific native tree species that have reached a minimum of four inches diameter trunk size; and 5) a trees of any size planted as a replacement for a Protected Tree.

4.4.1.2 *Existing Conditions*

The project site is located in a developed and urban area of Hayward. The project site includes buildings, paved and concrete areas, and landscaped areas typical of industrial uses. The main land cover for the site is developed/ornamental, which is not a sensitive land cover per CDFW. The site is bound by Production Avenue and industrial/R&D facilities to the northeast, Eden Landing Road and commercial facilities to the northeast, with Highway 92 located just beyond the commercial facilities, Investment Boulevard and industrial and commercial facilities to the south, and industrial manufacturing/R&D facilities to the southwest.

Vegetation in the vicinity of the project site includes landscaping planters, grasses, shrubs, and trees. Habitats in developed areas such as the project area typically include predominantly urban-adapted wildlife. There are no waterways, wetlands, or other sensitive habitats located on or adjacent to the project site. The nearest waterway is Mount Eden Creek, approximately 0.5 mile southwest of the project, which is part of the Eden Landing Ecological Reserve.[10] The Eden Landing Ecological Reserve also includes wetlands, salt ponds, and marshes.

Special Status Species

Wildlife habitats in developed, urban areas are low in species diversity. Special status plant and wildlife species are not present on the project site due to the lack of critical habitat to support these species. Non-status bird species protected by the Migratory Bird Treaty Act (MBTA) and by California Fish and Game Codes (CFGC), have the potential to nest in vegetation or on structures within or adjacent to the project area. Additionally, raptors (birds of prey) could use the trees on-site for nesting or as a roost. Raptors are protected by the MBTA under 16 U.S.C. Section 703, et seq.

Trees

Mature trees (both native and non-native) are valuable to the human environment, as they reduce the impacts of global climate change through carbon dioxide absorption, reduce urban heat island

[10] United States Fish and Wildlife Service. "National Wetlands Inventory." Accessed July 19, 2023. https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/.

effect, provide nesting and foraging habitat for raptors and other migratory birds, and provide visual enhancement. There are 50 existing trees onsite, 47 of which are considered protected trees per the City's Tree Preservation Ordinance. A summary of the trees onsite is provided in Table 4.4-1.

Table 4.4-1: Existing Tree Summary

Tree Tag #	Common Name	Truck Diameter	Protected Tree
1	Raywood Ash	21.3	Yes
2	Raywood Ash	22.3	Yes
3	Raywood Ash	16.7	Yes
4	Raywood Ash	15.7	Yes
5	Raywood Ash	19.5	Yes
6	Coast Redwood	33.7	Yes
7	Coast Redwood	36.2	Yes
8	Coast Redwood	27.5	Yes
9	Evergreen Pear	11	Yes
10	Coast Redwood	29.7	Yes
11	Evergreen Pear	14.1	Yes
12	Evergreen Pear	11.3	Yes
13	Evergreen Pear	10.7	Yes
14	Evergreen Pear	12.3	Yes
15	Evergreen Pear	12.5	Yes
16	Evergreen Pear	8.8	Yes
17	Bradford Pear	8.7	Yes
18	Evergreen Pear	11	Yes
19	Purple-Lear Plum	6.5	No
20	Powhatan Crape Myrtle	10.6	Yes
21	Powhatan Crape Myrtle	10.2	Yes
22	Powhatan Crape Myrtle	11.8	Yes
23	Powhatan Crape Myrtle	11.8	Yes
24	Powhatan Crape Myrtle	10.5	Yes
25	Blue Gum	31.2	Yes
26	Blue Gum	26.2	Yes
27	Blue Gum	50.4	Yes
28	Blue Gum	36.7	Yes
29	Blue Gum	41.2	Yes
30	Blue Gum	26.7	Yes
31	Blue Gum	25	Yes

32	Blue Gum	23.1	Yes
33	Blue Gum	26.1	Yes
34	Blue Gum	31	Yes
35	Blue Gum	23.2	Yes
36	Blue Gum	26	Yes
37	Blue Gum	29.7	Yes
38	Blue Gum	30.2	Yes
39	Blue Gum	35.7	Yes
40	Blue Gum	21.2	Yes
41	Blue Gum	24.4	Yes
42	Blue Gum	35	Yes
43	Blue Gum	25	Yes
44	Blue Gum	24.7	Yes
45	Blue Gum	32.3	Yes
46	Blue Gum	49	Yes
47	Blue Gum	33.1	Yes
48	Blue Gum	24.7	Yes
49	Powhatan Crape Myrtle	5.4	No
50	Powhatan Crape Myrtle	4.1	No

Source: Kielty Arborist Services LLC. "Eden Landing RD Arborist Report 2023." July 7, 2023. Appendix C.

4.4.2 Impact Discussion

For the purpose of determining the significance of the project's impact on biological resources, would the project:

1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?
2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?
3) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

4.4.2.1 *Project 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 CDFW or USFWS?

As discussed in Section 4.4.1.2 Existing Conditions above, the project site is currently developed and has low habitat value. There are no known candidate, sensitive, or special status species present on the project site. However, the trees onsite and adjacent to the project site could provide nesting habitat for birds, including migratory birds and raptors. Nesting birds are among the species protected under provisions of the MBTA and CFGC Sections 3503, 3503.5, and 2800.

Construction of the project during the avian breeding season (February 1-August 31) could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes abandonment and/or loss of reproductive effort is considered a taking by the CDFW. Any loss of fertile eggs, nesting birds, or any activities resulting in nest abandonment would constitute an impact. The following applicant-proposed project design measures would be implemented prior to construction to avoid significant biological resource impacts to nesting or roosting birds and raptors.

Impact BIO-1: Project ground disturbing activities including grading, construction activities, and tree removal during the nesting season could impact migratory birds and raptors.

Applicant Proposed Project Design Measure:

PD BIO-1.1: Nesting Season Avoidance. To the extent feasible, commencement of construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to commence outside the nesting season, all impacts to nesting birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Codes (CFGC) would be avoided. The nesting season for most birds in Alameda County extends from February 1 through August 31, inclusive.

PD BIO-1.2: Preconstruction/Pre-disturbance Surveys and Buffers. If it is not possible to schedule commencement of construction activities and/or tree removal between September 1 and January 31, preconstruction surveys for nesting birds shall be conducted by a qualified ornithologist to ensure that no nests

shall be disturbed during project implementation. These surveys shall be conducted no more than seven days prior to the initiation of demolition or construction activities, including tree removal and pruning. During this survey, the ornithologist shall inspect all trees and other potential nesting habitats (e.g., trees, shrubs, ruderal grasslands, buildings) in and immediately adjacent to the impact areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist shall determine the extent of a construction free buffer zone to be established around the nest (typically 300 feet for raptors and 100 feet for other species), to ensure that no nests of species protected by the MBTA and CFCG shall be disturbed during project implementation.

The project applicant shall submit a report indicating the results of the survey and any designated buffer zones to the satisfaction of the Director of Development Services, prior to the removal of any trees and issuance of a grading permit or demolition permit.

Conformance with State and federal laws protecting nesting birds through implementation of project design features PD BIO-1.1 and BIO-1.2 would reduce impacts to a less than significant level. **(Less than Significant Impact)**

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 CDFW or USFWS?

The project site is located in a developed, urban area of Hayward. There are no riparian habitats or other sensitive habitat areas on or adjacent to the project site. The nearest waterway is Mount Eden Creek, approximately 0.5 mile southwest of the project site, and no construction is proposed near the creek.

As discussed above in Section 4.4.1.2 Existing Conditions, Mount Eden Creek is part of the Eden Landing Ecological Reserve, which consists of 6,400 acres of restored salt ponds, adjacent diked marshes, and transitional areas to uplands.[11] To assess the potential effects of nitrogen deposition from the testing and maintenance of the backup generators, the applicant has commissioned a nitrogen deposition analysis on lands contained in the Eden Landing Ecological Reserve. Excessive nitrogen deposition on low-nitrogen habitats can potentially result in adverse impacts to the habitat. The analysis was not complete at the time of the filing of this SPPE Application and will be docketed under separate cover when available. However, based on numerous nitrogen deposition analyses performed for data center backup generators and the expected de minimus amount of

[11] California Department of Fish and Wildlife. "Eden Landing Ecological Reserve." Accessed July 19, 2023. https://wildlife.ca.gov/lands/places-to-visit/eden-landing-er#10541121-restoration.

nitrogen deposition, potential impacts on the Eden Landing Ecological Reserve are expected to be less than significant.

Therefore, the project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS. **(Less than Significant Impact)**

c) Would the project have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means?

The project site is within an urban area of Hayward and is developed with industrial buildings. There are no state or federally protected wetlands onsite. [12] Therefore, the project would not have a substantial adverse effect on wetlands. **(No Impact)**

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?

The project site is surrounded by built-out urban land uses (primarily industrial uses) and major roadways, such as Highway 92. The surrounding development and roadways act as barriers to movement for terrestrial species, thus eliminating connectivity between blocks of core habitat and constraining wildlife movement in the immediate vicinity of the project site. In addition, there are no streams or waterways adjacent or near the project site. The closest creek to the project site is Mount Eden Creek, located approximately half a mile southwest of the project site.[13] Mount Eden Creek is part of the Eden Landing Ecological Reserve, which consists of 6,400 acres of restored salt ponds, adjacent diked marshes, and transitional areas to uplands.[14] The project site is also not part of an established native or migratory wildlife corridor or nursery site. Therefore, the project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. **(No Impact)**

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

The project would remove all 50 existing trees onsite, including 47 protected trees. Pursuant to the Hayward Tree Preservation Ordinance, the project would be required to obtain a Tree Removal

[12] United States Fish and Wildlife Service. "National Wetlands Inventory." Accessed July 19, 2023. https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/.
[13] Ibid.
[14] California Department of Fish and Wildlife. "Eden Landing Ecological Reserve." Accessed July 19, 2023. https://wildlife.ca.gov/lands/places-to-visit/eden-landing-er#10541121-restoration.

Permit prior to tree removal and replace each Protected Tree with trees equal in size and species or value. The project would plant 46 new trees, as well as pay into the City of Hayward in-lieu fund for new trees at select locations within the City. Therefore, the project would comply with the Hayward Tree Preservation Ordinance. Therefore, the project would not conflict with any local policies or ordinances protecting biological resources. **(Less than Significant Impact)**

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

The project site is not located within a Habitat Conservation Plan or Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the project would not result in a conflict with such a plan. **(No Impact)**

4.4.2.2 *Cumulative Impacts*

Would the project result in a cumulatively considerable contribution to a significant cumulative biological resources impact?

The geographic area for cumulative biological resources impacts includes the project site and its surrounding area. The project site does not contain sensitive, wetland, or riparian habitat and, therefore, the project has no potential to combine with other projects to result in cumulative impacts to these resources. **(No Cumulative Impact)**

Implementation of the proposed project could result in impacts to nesting raptors, migratory birds, and trees. However, all future projects would be subject to federal and state regulations that protect nesting birds and the Hayward Tree Preservation Ordinance requiring the replacement of trees removed would avoid and/or reduce the cumulative impact to nesting birds and trees. Finally, through implementation of the applicant proposed project design measures described in this section, the project's contribution to a biological impact would not be cumulatively considerable. For these reasons, the proposed project would not result in a significant cumulative impact to biological resources. **(Less than Significant Cumulative Impact)**

4.5 Cultural Resources

The following discussion is based upon a Cultural Resource Assessment Report prepared by Chronicle Heritage LLC in August 2023. A copy of the report will be docketed with the Commission under a Request for Confidentiality as Appendix D. In this report mitigation measures are recommended to reduce impacts. The Applicant has incorporated these recommendations into project design features as discussed below.

4.5.1 Environmental Setting

4.5.1.1 *Regulatory Framework*

Federal and State

National Historic Preservation Act

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

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is administered by the State Office of Historic Preservation and encourages protection of resources of architectural, historical, archeological, and cultural significance. The CRHR identifies historic resources for state and local planning purposes and affords protections under CEQA. Under Public Resources Code Section 5024.1(c), a resource may be eligible for listing in the CRHR if it meets any of the NRHP criteria.[15]

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

The concept of integrity is essential to identifying the important physical characteristics of historical resources and, therefore, in evaluating adverse changes to them. Integrity is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics

[15] California Office of Historic Preservation. "CEQA Guidelines Section 15064.5(a)(3) and California Office of Historic Preservation Technical Assistance Series #6." Accessed August 31, 2020. http://www.ohp.parks.ca.gov/pages/1069/files/technical%20assistance%20bulletin%206%202011%20update.pdf.

that existed during the resource's period of significance." The processes of determining integrity are similar for both the CRHR and NRHP and use the same seven variables or aspects to define integrity that are used to evaluate a resource's eligibility for listing. These seven characteristics include 1) location, 2) design, 3) setting, 4) materials, 5) workmanship, 6) feeling, and 7) association.

California Native American Historical, Cultural, and Sacred Sites Act

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

Public Resources Code Sections 5097 and 5097.98

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

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

Hayward 2040 General Plan

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

Policy	Description
LU-8.3	Historic Preservation Ordinance. The City shall maintain and implement its Historic Preservation Ordinance to safeguard the heritage of the city and to preserve historic resources.
LU-8.6	Historic Preservation Standards and Guidelines. The City shall consider The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings when evaluating development applications and City projects involving historic resources, or development applications that may affect scenic view or historic context of nearby historic resources.

Hayward Historic Preservation Ordinance

The City's Historic Preservation Ordinance (Article 10.11 of the Hayward Municipal Code) is intended to identify, protect, and enhance historical resources, archaeological sites, and other cultural resources within the City. The Historic Preservation Ordinance sets forth conditions of approval required for projects that may impact historic or archaeological resources. Projects that would involve demolition, alter, or relocate a structure at least 50 years in age, or which are located within an historic district, would be required to underground a development review process to obtain a historical alteration permit and/or historical resource demolition or relocation permit. Project sites identified as archaeologically sensitive by any archaeological sensitivity map adopted by the City shall be subject to the review process and conditions of project approval outlined in Section 10-11.150.

4.5.1.2 *Existing Conditions*

Historical Resources

Historic-Era Buildings

The site is currently developed as the Eden Landing Business Park and consists of nine existing one-story buildings with a total combined square footage of approximately 167,471 square feet. The project site is not within a historic district.

To determine the eligibility of existing buildings as historical resources, the Cultural Resource Assessment Report reviewed buildings older than 50 years in age located onsite and within a one-parcel buffer of the project site. Of the nine existing buildings onsite, two buildings meet the 50 year old threshold, one constructed in 1971 (52 years old) and one constructed in 1973 (50 years old. Within a one-parcel buffer, nine buildings were identified as 50 years or older. A total of 11 buildings were identified and evaluated for listing as historical resources. None of the identified properties were previously evaluated for the NRHP, CRHR, or were included in the City of Hayward Historic Inventory.

Table 4.5-1: Buildings Potentially Eligible for Historical Resource Listing

Number	Address	APN	Current Use	Year Built
1	26010 Eden Landing Road	461-0085-052-01	Multi-tenant office park: Eden Landing Business Park, Suite 1B	1971
2	26203 Production Avenue	461-0085-001-08	Multi-tenant office park: Eden Landing Business Park, Suite # 9-2	1973
3	3500 Breakwater Avenue	439-0099-010-06	Service Station: Union Oil 76	1974[16]
4	25858 Clawiter Road	439-0080-011-02	Industrial/manufacturing: Matagrano Beverage Distributor, Michelin Tires	1963
5	3521 Investment Boulevard	461-0085-016-00	Multi-tenant office park: Eden Plaza Business Park	1977
6	25972 Eden Landing Road	461-0001-037-03	Commercial: Gillig Corporation HQ	1971
7	3486 Investment Boulevard	461-0001-026-00	Industrial light/manufacturing: Core & Main, Rodan Builders	1968
8	3524 Investment Boulevard	461-0085-046-00	Industrial light/warehouse: Global Quality Foods, Inc.	1975[17]
9	3474 Investment Boulevard	461-0001-027-00	Industrial/warehouse	1969
10	3400 Investment Boulevard	461-0001-028-00	Industrial/warehouse	1969
11	3474 Investment Boulevard	461-0001-027-00	Industrial/warehouse	1969

Source: Chronicle Heritage. *Cultural Resource Assessment Report for the Eden Landing Data Center Project*. August 2023.

Based on the results of the Cultural Resource Assessment Report, none of the properties listed in Table 4.5-1 meet one or more eligibility criteria for listing in the NRHP, CRHR, or as a City Designated Historical Resource. None of the buildings would be deemed a historical resource pursuant to CEQA or the City municipal code.

Archaeological Resources

On June 14, 2023, a records search of the California Historical Resource Information System from the Northwest Information Center (NWIC) was requested. The NWIC is an affiliate of the State of California Office of Historic Preservation and the official state repository of cultural resource records and reports for Alameda County. A pedestrian survey of the project site to identify any previously unidentified resources that may be impacted by the project was completed on July 17, 2023. During the pedestrian survey, exposed and accessible ground surfaces within the area were examined for the presence of historic or pre-historic period archaeological site indicators. Historic

[16] While this building was not 50 years of age at the time of the study, it was conservatively included in this analysis.
[17] While this building was not 50 years of age at the time of the study, it was conservatively included in this analysis.

period indicators of archaeological sites include foundations, fence lines, ditches, standing buildings, or concentrations of materials at least 45 years in age. No pre-contact or historical features or artifacts were observed during the survey.

Historic-era Archaeological Resources

Based on the results of the record search, only one previously recorded historic period cultural resource was documented near the project site, the Eastshore-Grant Transmission Line. The transmission line is a four mile long Pacific Gas & Electric (PG&E) alignment extending from the Eastshore Substation in Hayward to the Grant Substation in San Lorenzo. The north–south trending line cuts through flat urban and industrial-use paved parking lots and undeveloped open space. The transmission line features standard 115 kV steel lattice towers. The transmission line is still in use and provides a significant amount of power to the residents and businesses of the region. Per the Cultural Resource Assessment Report, the line of towers do not appear to be eligible for the NRHP under Criterion A, B, C, or D; the CRHR under Criterion 1, 2, 3, or 4; nor do they appear to be significant individually, or as part of a larger whole.

Pre-Contact Resources

Results of the archaeological pedestrian survey and records search were negative for pre-contact period sites, i.e. Native American archaeological resources prior to the arrival of Europeans. However, the project site is less than two miles from the San Francisco Bay, a resource-rich area that has been heavily used by humans for millennia. There is a moderate potential to encounter previously undocumented archaeological materials during excavation in native sediments.

Native American Resources

A Sacred Lands File search was submitted to the NAHC on June 13, 2023. The results of the search were positive, which indicates that the project site is not absent of cultural resources possibly tied to Native American tribes.

4.5.2 Impact Discussion

For the purpose of determining the significance of the project's impact on cultural resources, would the project:

1) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?
3) Disturb any human remains, including those interred outside of dedicated cemeteries?

4.5.2.1 *Project Impacts*

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

Pursuant to CEQA Guidelines Section 15064.5 (b)(1), a "substantial adverse change" in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. As described in Section 4.5.1.2 Existing Conditions, the project site is developed with nine existing industrial and commercial buildings. Two buildings onsite and nine buildings adjacent to the project site are over 50 years old. Although these 11 buildings are over 50 years old, they are not known to be associated with a significant historical event or person and do not embody characteristics of a significant architectural type. These buildings were not deemed historic resources or properties listed on federal, state, or local inventories. Additionally, the project site is not located within a historic district and the proposed development would not detract from the historical significance of any nearby historic structures through incompatible land uses or design. For these reasons, the project would not cause a substantial adverse change in the significance of a historical resource. Therefore, the project would have a less than significant impact on historically significant structures pursuant to CEQA Guidelines Section 15064.5. **(Less than Significant Impact)**

c) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

As described in Section 4.5.1.2 Existing Conditions, the project site is located within an area of moderate archaeological sensitivity. No archaeological resources were identified during the pedestrian review; however, construction activities onsite could significantly impact previously undiscovered archaeological resources, if encountered. The project would excavate to a maximum depth of three feet for a matt slab foundation, approximately 20-feet (depth pending final geotechnical recommendations) for the foundation's rammed aggregate piers, and seven feet below existing grade for the drainage facilities (bioretention areas). The maximum extent of excavation for the drainage facilities on-site is 90,000 cubic-feet or approximately 3,500 cubic-yards. A site grading and drainage plan is shown in Figure 2.3-12. In accordance with the recommendations of the project-specific Cultural Resource Assessment Report, the following applicant-proposed project design measures would be implemented by the project to reduce impacts to subsurface archaeological resources.

Impact CUL-1: Ground disturbing activities associated with project construction may result in impacts to unrecorded archaeological resources.

Applicant Proposed Project Design Measure:

PD CUL-1.1: Worker Environmental Awareness Program. Prior to the start of construction, the project applicant will secure the services of a qualified archaeological specialist as well as a Native American monitor who is traditionally and culturally affiliated with the geographic area (e.g., Yrgin band of Ohlone). These specialists and monitors will prepare a Worker Environmental Awareness Program (WEAP) to instruct construction workers of the obligation to protect and preserve valuable archaeological and Native American resources. This program shall 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. The qualifications of the archaeological specialist and Native American monitor, as well as an electronic copy of the WEAP, shall be submitted to and approved by the City of Hayward's Planning Director or the Director's designee.

PDF CUL-1.2: Construction Monitoring and Protection Measures: All ground-disturbing activities in native soil (e.g., grading and excavation) shall be completed under the observation of a qualified archaeologist as well as a qualified Native American monitor who is traditionally and culturally affiliated with the geographic area.

The qualified archaeologist and Native American monitor shall have authority to halt construction activities temporarily in the immediate vicinity of an unanticipated find. If, for any reasons, the qualified archaeologist or qualified Native American monitor are not present but construction crews encounter a cultural resource, then all work shall stop temporarily within 50 feet of the find until a qualified archaeologist in consultation with a qualified Native American monitor, have been contacted to determine the proper course of action. The City of Hayward's Planning Director or the Director's designee shall be notified of any finds during the grading or other construction activities.

PD CUL-1.3: Undiscovered Archaeological Resources. If evidence of an archaeological site or other suspected cultural resource as defined by CEQA Guideline Section 15064.5 that could conceal material remains (e.g., worked stone, worked bone, fired clay vessels, faunal bone, hearths, storage pits, or burials), such as darkened soil representing past human activity ("midden"), is discovered during construction-related earth-moving activities, all ground-disturbing activity within 50 feet of the resource shall be halted and the City of Hayward's Planning Director or the Director's designee shall be notified. The project sponsor shall hire a qualified archaeologist to conduct a field investigation. The City of Hayward's Planning

Director or the Director's designee shall consult with the archaeologist to assess the significance of the find. Impacts to any significant resources shall be mitigated to a less-than-significant level through data recovery or other methods determined adequate by a qualified archaeologist and that are consistent with the Secretary of the Interior's Standards for Archaeological documentation. Any identified cultural resources shall be recorded on the appropriate DPR 523 (A-J) form and filed with the NWIC.

PD CUL-1.4: Report of Archaeological Resources. If archaeological resources are identified, a final report summarizing the discovery of cultural materials shall be submitted to the City of Hayward's Planning Director or the Director's designee prior to issuance of the certificate of occupancy. This report shall contain a description of the mitigation program that was implemented and its results, including a description of the monitoring and testing program, a list of the resources found and conclusion, and a description of the disposition/curation of the resources.

Implementation of these applicant-proposed project measures would ensure impacts to archaeological resources due to subsurface excavation and groundwork are reduced to a less than significant level. With implementation of PD CUL-1.1 – PD CUL-1.4, the project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. **(Less than Significant Impact)**

d) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

As described above, there are no recorded archaeological resources, including human remains, on-site. In the unlikely event human remains are unearthed during project construction, the project would be required to implement the following conditions of approval, pursuant to the City's Historic Preservation Ordinance. The following applicant-proposed project design measures would be implemented during construction if unrecorded human remains are discovered.

Impact CUL-2: Ground disturbing activities associated with project construction may result in impacts to unrecorded human remains.

Applicant Proposed Project Design Measure:

PD CUL-2.1: Human Remains: If human remains are discovered during project construction, all ground disturbing activity within 100 feet of the remains shall be halted and the City's Planning Manager and the Alameda County Coroner shall be notified immediately, in accordance with Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County Coroner to be Native American, the Native

American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project sponsor shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City of Hayward shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of State law, as set forth in CEQA Guidelines section 15064.5(e) and Public Resources Code section 5097.98. The project sponsor shall implement approved mitigation, to be verified by the City of Hayward, before the resumption of ground-disturbing activities within 100 feet of where the remains were discovered.

By following the process set forth in PD CUL-2.1, the proposed project would not result in a significant impact to human remains. **(Less than Significant Impact)**

4.5.2.2 *Cumulative Impacts*

a) Would the project result in a cumulatively considerable contribution to a significant cumulative cultural resources impact?

The geographic area for cultural resources is the project site and adjacent parcels, as cultural resource impacts are typically localized and generally limited to the immediate area in which a given cultural resources is located. Cumulative projects in the area may require excavation and grading or other activities that may affect unknown prehistoric cultural resources and/or historic resources. Other projects in the City of Hayward may also have cultural resources, irrespective of their designation as on local, state, or federal registers. Any excavation or grading activities could affect these known and unknown cultural resources. Therefore, the City requires project-specific archaeological resource reports be prepared during the environmental review process or requires projects to adopt the conditions of approval for archaeologically sensitive areas outlined in Section 10-11.150 of the City's municipal code to reduce potential impacts to cultural resources (including human remains). Project-level analyses determines the necessity of additional mitigation measures to reduce localized and site-specific impacts to these resources.

Historic Resources

As discussed under checklist question a), the project site is not classified as a historic resource nor is it eligible to be listed on the CRHR, NRHP, or the City of Hayward Historic Inventory. The project would not contribute to a significant cumulative impact on historic resources. **(Less than Significant Cumulative Impact)**

Archaeological Resources

Cumulative projects (including the proposed project) would be required to implement either project-specific mitigation measures or the City's conditions of approval to reduce impacts to archaeological resources (if encountered) to a less than significant level. The project includes PD CUL-1.1 through CUL-1.4 in order to ensure the proposed development does not impact pre-contact or historic resources. With implementation of the applicant proposed design measures, the project would not result in significant cumulative impacts to archaeological resources. **(Less than Significant Cumulative Impact)**

Human Remains

This project and all future cumulative projects would be required to adhere to all provisions of California Health and Safety Code Sections 7054 and 7050.5 and Public Resources Code Sections 5097.9 through 5097.99, as amended per Assembly Bill 2641, if human remains are discovered during earthwork activities. State regulations and project-specific mitigation or design features would require that any discovered human remains be handled properly. Conformance with existing regulations and applicant proposed design measures would ensure the project does not result in significant cumulative impacts to archaeological resources **(Less than Significant Cumulative Impact)**

4.6 Energy

4.6.1 Environmental Setting

4.6.1.1 *Regulatory Framework*

Federal and State

Energy Star and Fuel Efficiency

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

Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2010. Governor Schwarzenegger issued Executive Order (EO) S-3-05, requiring statewide emissions reductions to 80 percent below 1990 levels by 2050. In 2008, EO S-14-08 was signed into law, requiring retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020. In October 2015, Governor Brown signed SB 350 to codify California's climate and clean energy goals. A key provision of SB 350 requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable sources by 2030. SB 100, passed in 2018, requires 100 percent of electricity in California to be provided by 100 percent renewable and carbon-free sources by 2045.

Executive Order B-55-18 To Achieve Carbon Neutrality

In September 2018, Governor Brown issued an executive order, EO-B-55-18 To Achieve Carbon Neutrality, setting a statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." The executive order requires CARB to "ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal." EO-B-55-18 supplements EO S-3-05 by requiring not only emissions reductions, but also that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2 from the atmosphere through sequestration.

California Building Standards Code

The Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6 of the California Code of Regulations (Title 24), was established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 is updated approximately

every three years.[18] Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments.[19]

California Green Building Standards Code

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

Advanced Clean Cars Program

CARB adopted the Advanced Clean Cars II program in 2022 in coordination with the EPA and National Highway Traffic Safety Administration. The program combines the control of smog-causing pollutants and GHG emissions into a single coordinated set of requirements for vehicle model years 2026 through 2035. The program promotes development of environmentally superior passenger cars and other vehicles, as well as saving the consumer money through fuel savings.[20]

Regional and Local

Hayward 2040 General Plan

The Hayward 2040 General Plan (General Plan) includes policies for the purpose of avoiding or mitigating impacts resulting from development projects within the City. The following policies are specific to energy and are applicable to the proposed project.

Policy	Description
NR-4.1	Energy Efficient Measures. The City shall promote the efficient use of energy in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.
NR-4.3	Efficient Construction and Development Practices. The City shall encourage construction and building development practices that maximize the use of renewable resources and minimize the use of non-renewable resources throughout the lifecycle of a structure.
NR-4.6	Renewable Energy. The City shall encourage and support the generation, transmission, use, and storage of locally-distributed renewable energy in order to promote energy independence, efficiency, and sustainability. The City shall consider various incentives to

[18] California Building Standards Commission. "California Building Standards Code." Accessed September 7, 2023. https://www.dgs.ca.gov/BSC/Codes#@ViewBag.JumpTo.
[19] California Energy Commission (CEC). "2022 Building Energy Efficiency Standards." Accessed September 7, 2023. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency.
[20] California Air Resources Board. "Advanced Clean Cars II." Accessed September 7, 2023. https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii

	encourage the installation of renewable energy projects (i.e., reduced permit fees and permit streamlining).
NR-4.11	Green Building Standards. The City shall require newly constructed or renovated public and private buildings and structures to meet energy efficiency design and operations standards with the intent of meeting or exceeding the State's zero net energy goals by 2020.
NR-6.15	Native Vegetation Planting. The City shall encourage private property owners to plant native or drought-tolerant vegetation in order to preserve the visual character of the area and reduce the need for toxic sprays and groundwater supplements.
NR-6.16	Landscape Ordinance Compliance. The City shall continue to implement the Bay Friendly Water Efficient Landscape Ordinance.

Hayward Climate Action Plan

In July 2009, Hayward City Council adopted the Hayward Climate Action Plan. In 2014, the climate action plan was incorporated into the City's General Plan. The General Plan contains policies and implementation programs that serve as the actions to reduce greenhouse gas emissions. The overall objectives of these policies and implementation programs are to reduce Hayward's greenhouse gas emissions by:

- 20 percent below 2005 baseline levels by 2020,
- 62.7 percent below 2005 baseline levels by 2040, and
- 82.5 percent below 2005 baseline levels by 2050.

4.6.1.2 *Existing Conditions*

Total energy usage in California was approximately 7,359.4 trillion British thermal units (Btu) in the year 2021, the most recent year for which this data is available.[21] Out of the 50 states, California is ranked second in total energy consumption and 47th in energy consumption per capita. The breakdown by sector was approximately 20.0 percent (1,473.2 trillion Btu) for residential uses, 19.0 percent (1,396.7 trillion Btu) for commercial uses, 23.2 percent (1,704.4 trillion Btu) for industrial uses, and 37.8 percent (2,785.1 trillion Btu) for transportation.[22] This energy is primarily supplied in the form of natural gas, petroleum, nuclear electric power, and hydroelectric power.

Electricity

In 2021, a total of approximately 10,237 gigawatt hours (GWh) of electricity was consumed in Alameda County.[23] Electricity was primarily consumed by the non-residential sector (68 percent), followed by the residential sector (33 percent).

[21] United States Energy Information Administration. "State Profile and Energy Estimates, 2021." Accessed August 1, 2023. https://www.eia.gov/state/?sid=CA#tabs-2.
[22] United States Energy Information Administration. "State Profile and Energy Estimates, 2021." Accessed August 1, 2023. https://www.eia.gov/state/?sid=CA#tabs-2.
[23] California Energy Commission. Energy Consumption Data Management System. "Electricity Consumption by County." Accessed September 7, 2023. http://ecdms.energy.ca.gov/elecbycounty.aspx.

East Bay Community Energy (EBCE) is the electricity provider for Alameda County. EBCE sources the electricity and PG&E delivers it to customers over their existing utility lines. EBCE customers are automatically enrolled in Brilliant 100, which provides electricity from 100 percent carbon-free sources (hydropower).[24] Customers in Hayward are automatically enrolled in the Renewable 100 option which sources energy from 100 percent renewable sources (small hydroelectric, solar, and wind); however, customers can select the Bright Choice option, which sources energy from at least 38 percent renewable and an additional 47 percent carbon-free sources or opt out of EBCE to purchase electricity from PG&E.

Natural Gas

PG&E provides natural gas services in Hayward. In 2022, California's natural gas supply came from a combination of in-state production and imported supplies from other western states and Canada.[25] In 2021, residential and commercial customers in California used 39 percent of the state's natural gas, transportation used 38 percent, and industrial uses used 23 percent.[26] In 2021, Alameda County used approximately three percent of the state's total consumption of natural gas.[27]

Fuel for Motor Vehicles

In 2022, California produced 124 million barrels of crude oil and in 2019, billion gallons of gasoline were sold in California. [28], [29] The average fuel economy for light-duty vehicles (autos, pickups, vans, and sport utility vehicles) in the United States has steadily increased from about 13.1 miles per gallon (mpg) in the mid-1970s to 25.4 mpg in 2021.[30] Federal fuel economy standards have changed substantially since the Energy Independence and Security Act was passed in 2007. That standard, which originally mandated a national fuel economy standard of 35 miles per gallon by the year 2020, was updated in April 2022 to require all cars and light duty trucks achieve an overall industry average fuel economy of 49 mpg by model year 2026. [31,32]

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[24] East Bay Community Energy. "Power Mix." Accessed September 7, 2023. https://ebce.org/our-power-mix/index.html/

[25] California Gas and Electric Utilities. *2022 California Gas Report*. 2022.

[26] United States Energy Information Administration. "Natural Gas Consumption by End Use. 2021." Accessed September 7, 2023. https://www.eia.gov/state/?sid=CA#tabs-2.

[27] California Energy Commission. "Natural Gas Consumption by County." Accessed September 7, 2023. http://ecdms.energy.ca.gov/gasbycounty.aspx.

[28] U.S. Energy Information Administration. "Petroleum & Other Liquids, California Field Production of Crude Oil." February 28, 2023. https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrfpca1&f=a

[29] California Department of Tax and Fee Administration. "Net Taxable Gasoline Gallons." Accessed September 7, 2023. https://www.cdtfa.ca.gov/dataportal/dataset.htm?url=VehicleTaxableFuelDist.

[30] United States Environmental Protection Agency. "The 2022 EPA Automotive Trends Report: Greenhouse Gas Emissions, Fuel Economy, and Technology since 1975." December 2022. https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1010U68.pdf

[31] United States Department of Energy. *Energy Independence & Security Act of 2007.* Accessed September 7, 2023. http://www.afdc.energy.gov/laws/eisa.

[32] United States Department of Transportation. USDOT Announces New Vehicle Fuel Economy Standards for Model Year 2024-2026." Accessed September 7, 2023. https://www.nhtsa.gov/press-releases/usdot-announces-new-vehicle-fuel-economy-standards-model-year-2024-2026

4.6.2 Impact Discussion

For the purpose of determining the significance of the project's impact on energy, would the project:

1) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?
3) Result in a substantial increase in demand upon energy resources in relation to projected supplies?

4.6.2.1 *Project Impacts*

a) Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction

Project construction would consume energy during demolition, grading, excavation, trenching, and paving; however, the project would not waste or use energy inefficiently. Construction processes are generally designed to be efficient in order to save money. That is, equipment and fuel are not typically used wastefully on the site because of the added expense associated with renting the equipment, as well as maintenance and fuel. Compared to construction in outlying, undeveloped areas, the proposed project would save energy by constructing in an urbanized area that is proximate to roadways, construction supplies, and workers. In addition, construction of the proposed project includes several measures to improve the efficiency of the construction process, including participating in the City's recycling construction and demolition materials program, restricting equipment idling times to five minutes or less, and requiring the project to post signs on-site reminding workers to shut off idling equipment (see discussion under Section 4.9.2.3). **(Less than Significant Impact)**

Operations

Operation of the project would consume energy for multiple purposes including, but not limited to, building heating and cooling, lighting, appliances, and electronics. Energy would also be consumed during each vehicle trip generated by employees and visitors. The project would be constructed in accordance with Title 24 and CALGreen standards and would include green building measures to reduce energy consumption. The project would also utilize lighting control to reduce energy usage for new exterior lighting and air economization for building cooling. Water efficient landscaping and ultra-low flow plumbing fixtures in the building would be implemented to limit water consumption.

Power Usage Effectiveness, or PUE, is a metric used to compare the efficiency of facilities that house computer servers. PUE is defined as the ratio of total facility energy use to Information

Technology (IT) (i.e., server) power draw (e.g., PUE = Total Facility Source Energy/ IT Source Energy). For example, a PUE of two (2), means that the data center or laboratory must draw two (2) watts of electricity for every one (1) watt of power consumed by the IT/server equipment. It is equal to the total energy consumption of a data center (for all fuels) divided by the energy consumption used for the IT equipment. The ideal PUE is one (1) where all power drawn by the facility goes to the IT infrastructure. For a worst case day, where the maximum critical IT load and maximum mechanical cooling electrical load occur during the hottest hour, the peak PUE for the SVY03A Campus would be 1.28. Such conditions to cause this PUE are possible but extremely unlikely to ever occur. The average PUE for the SVY03A Campus would be 1.15. Based on industry surveys, the average PUE for data centers is 1.67, although newly constructed data centers typically have PUEs ranging from 1.1 to 1.4.[33]

Due to the energy efficiency measures incorporated into the facility, the project would not result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources.

Energy would also be consumed by the SVY03ABGF during regular testing and maintenance of the emergency backup generators. Each generator would be limited to a maximum of 50 hours per year of operation. Based on maximum fuel consumption assumptions in the air quality analysis prepared for the project (refer to Appendix A), the SVY03ABGF could consume up to roughly 259,815 gallons of biodiesel fuel per year for generator maintenance and testing. According to the U.S. Energy Information Administration, California can produce a combined total of about 72 million gallons of biodiesel annually from four production plants.[34] The maximum proposed consumption of biodiesel fuel by the project would be approximately 0.36 percent of the total California capacity. In reality, the SVY03ABGF is highly unlikely to consume this amount of biodiesel fuel. These calculations are based on a maximum impact scenario where all engines are operated at 100 percent load for the full 50 hours per year that would be allowed under the BAAQMD permits. Typically, generators are tested at loads ranging from 10 to 100 percent, and only rarely would the SVY03ABGF generators be tested at 100 percent load. Additionally, it is not anticipated that the SVY03ABGF would test the generators for the maximum 50 hours per year allowed under the BAAQMD permits. Because the generators would only be operated when necessary for testing and maintenance, and would not be used regularly for electricity generation, the SVY03ABGF would not result in a wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. Additionally, the SVY03ABGF would not have a significant adverse effect on local or regional energy supplies and would not create a significant adverse impact on California's energy resources. **(Less than Significant Impact)**

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

[34] U.S. Energy Information Administration. California State Energy Profile. Accessed September 8, 2023. https://www.eia.gov/state/print.php?sid=CA#77

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Statewide energy efficiency and renewable energy goals are set forth in the California Renewables Portfolio Standard Program, which is one of California's key programs for advancing renewable energy. The CEC verifies the eligibility of renewable energy procured by all entities serving retail sales of electricity in California, as these entities are obligated to participate and report energy portfolios to the CEC to comply with the Renewables Portfolio Standard Program.[35] The project would opt to have electricity provide by PG&E from sources of renewable and carbon-free power. As described above, PG&E is subject to verification by the CEC as an electricity-providing entity. By sourcing electricity from PG&, the project would be compliant with statewide energy goals as set forth in the California Renewables Portfolio Standard Program.

The project would be consistent with the policies described in Section 4.6.1.1. In addition, the proposed project would comply with Title 24 and CALGreen and the green building measures listed above. For these reasons, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **(Less than Significant Impact)**

c) Would the project result in a substantial increase in demand upon energy resources in relation to projected supplies?

The CEC provides new forecasts for electricity and natural gas demand every two years as part of the Integrated Energy Policy Report process. According to the 2021 Integrated Energy Policy Report, annual electricity consumption in California in 2020 was approximately 279,000 GWh, which is expected to increase at a rate of about 1.6 percent annually through 2035 with the consumption reaching 340,000 GWh in 2035.[36] Demand forecasts for planning purposes use multiple scenarios, taking into account potential savings in different sectors, expected technological improvements, government mandates, and other factors. With continued inter-agency coordination, accurate forecasting, and research and development, California is expected to adequately supply the state's forecasted demand increases through 2035.

The proposed project would have a maximum electricity demand of 671,016 MWh per year if the project were to operate at maximum capacity at all times.[37] This is an extremely unlikely scenario, and the actual energy demand of the project would be substantially lower. Even the maximum

[35] California Energy Commission. "Renewables Portfolio Standard – Verification and Compliance." Accessed September 7, 2023. https://www.energy.ca.gov/programs-and-topics/programs/renewables-portfolio-standard/renewables-portfolio-standard

[36] California Energy Commission. *Final 2021 Integrated Energy Policy Report Volume IV California Energy Demand Forecast*. February 17, 2022. Page 21. file:///C:/Users/mmcnamara/Downloads/TN241581_20220217T142233_ADOPTED%20Final%202021%20Integrated%20Energy%20Policy%20Report%20%20Volume%20IV%20California%20En.pdf

[37] The maximum electricity demand in MWh was calculated by multiplying the maximum electricity demand of 76.6 MW by the total hours in a year (8,760).

project electricity demand load would comprise a miniscule fraction of the expected statewide electricity consumption. The diesel fuel use for the emergency generators is discussed in checklist question "a," and would also represent a miniscule fraction of the expected statewide diesel fuel consumption. In addition, the proposed project would be designed for energy efficiency and conservation. Therefore, the project would not result in a substantial increase in demand upon energy resources relative to projected supplies. **(Less than Significant Impact)**

4.6.2.2 *Cumulative Impacts*

a) Would the project result in a cumulatively considerable contribution to a significant cumulative energy impact?

The geographic area for cumulative energy impacts is the State of California. Past, present, and future development projects contribute to the state's energy impacts. If a project is determined to have a significant energy impact, it is concluded that the impact is cumulatively considerable. As discussed above, the project would not result in significant energy impacts or conflict or obstruct a state or local plan for energy efficiency. The project, therefore, would not have a cumulatively considerable contribution to a significant cumulative energy impact. **(Less than Significant Cumulative Impact)**

4.7 Geology and Soils

The following discussion is based, in part, on a Preliminary Geotechnical Investigation prepared for the project by Cornerstone Earth Group in August 2022. The Preliminary Geotechnical Investigation is included as Appendix E.

4.7.1 Environmental Setting

4.7.1.1 *Regulatory Framework*

State

Alquist-Priolo Earthquake Fault Zoning Act

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

Seismic Hazards Mapping Act

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

California Building Standards Code

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

California Division of Occupational Safety and Health Regulations

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

Public Resources Code Section 5097.5

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

Local

Hayward 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from development projects within the City. The following policies are specific to geology and soils and are applicable to the project:

Policy	Description
NR-6.4	Minimizing Grading. The City shall minimize grading and, where appropriate, consider requiring onsite retention and settling basins.
NR-6.5	Erosion Control. The City shall concentrate new urban development in areas that are the least susceptible to soil erosion into water bodies in order to reduce water pollution.
NR-7.1	Paleontological Resource Protection. The City shall prohibit any new public or private development that damages or destroys a historically- or prehistorically-significant fossil, ruin, or monument, or any object of antiquity.
NR-7.2	Paleontological Resource Mitigation. The City shall develop or ensure compliance with protocols that protect or mitigate impacts to paleontological resources, including requiring grading and construction projects to cease activity when a paleontological resource is discovered so it can be safely removed.
HAZ-2.1	Seismic Safety Codes and Provisions. The City shall enforce the seismic safety provisions of the Building Code and Alquist-Priolo Special Studies Zone Act to minimize earthquake-related hazards in new construction, particularly as they relate to high occupancy structures or buildings taller than 50 feet in height.
HAZ-2.2	Geologic Investigations. The City shall require a geologic investigation for new construction on sites within (or partially within) the following zones:

	• Fault Zone • Liquefaction Zone • Landslide Zone A licensed geotechnical engineer shall conduct the investigation and prepare a written report of findings and recommended mitigation measures to minimize potential risks related to seismic and geologic hazards.
HAZ-2.4	New Buildings in a Fault Zone. The City shall prohibit the placement of any building designed for human occupancy over active faults. All buildings shall be set back from active faults by at least 50 feet. The City may require a greater setback based on the recommendations of the licensed geotechnical engineer evaluating the site and the project.

4.7.1.2 *Existing Conditions*

Regional Geology

Hayward is located on the eastern side of San Francisco Bay, a region of varied geographic composition and topography. Hayward contains three distinct geologic zones: (1) properties near the Bay in the western portion of the community (bay lands); (2) the primarily urbanized portion of the community below the elevation of 500 feet above sea level (bay plain); and (3) the Hayward Hills, which are part of the Diablo Range and have elevations of up to 1,500 feet, in the eastern portion of Hayward.[38]

Geologic materials beneath Hayward include bedrock, Bay Mud near estuarine areas, semi-consolidated and unconsolidated alluvium along streams and beneath flat-lying areas, colluvium on slopes derived from bedrock, and artificial fill (especially along the Bay margins).[39]

On-site Geologic Conditions

Topography and Soils

The topography of the project site is relatively flat with the site having an elevation of between 13 and 20 feet above mean sea level.[40] The project site is underlain by Holocene age fan or basin deposits. Undocumented fill consisting of very stiff sandy lean clay was encountered to a depth of approximately two feet below existing grades. In general, beneath the fill, very stiff lean clay with varying amounts of sand was encountered to depths of approximately nine feet, underlain by medium stiff lean clay with varying amounts of sand to depths of approximately 12 to 15.5 feet. The Preliminary Geotechnical Report found the surficial soils blanketing the site to be moderately to highly expansive soils.

Groundwater

[38] City of Hayward. *Hayward 2040 General Plan Background Report.* January 2014. Page 9-2.
[39] Ibid.
[40] Google Earth. September 7, 2023.

Based on the geotechnical study prepared for the project site, groundwater within the vicinity of the project site has been estimated at a depth of approximately eight to nine feet bgs. Historic high groundwater depth is approximately eight to ten feet bgs for the site. Fluctuations in groundwater levels may occur due to seasonal changes, variations in rainfall, underground patterns, and other factors.

Seismicity and Seismic Hazards

There are several major fault zones present in the Bay Area. The Working Group on California Earthquake Probabilities has estimated that there is a 62 percent probability that one or more major earthquakes would occur in the San Francisco Bay Area between 2002 and 2031.[41] The Hayward Fault is located approximately 3.7 miles east of the project site at its nearest point. The site is not located within a State-designated Alquist Priolo Earthquake Fault Zone. The project site would be subject to strong ground shaking during a seismic event but would not experience surface rupturing.

Liquefaction

Liquefaction is a result of seismic activity characterized by the transformation of loose water-saturated soils from a solid state to a liquid state during ground shaking. The project site is located within a State-designated Liquefaction Hazard Zone. Additionally, the Preliminary Geotechnical Report determined that several layers on-site could potentially experience liquefaction that could result in post-liquefaction total settlement.

Landslides and Lateral Spreading

The potential for landslides or downslope movement is dependent on slope geometry, subsurface soils, and groundwater conditions, prior slope behavior, and severity of ground shaking. The project site is located in a relatively flat area and is not within a landslide hazard zone.[42]

Lateral spreading is a type of ground failure related to liquefaction. It consists of the horizontal displacement of flat-lying soil material toward an open face, such as the steep bank of a stream channel. There are no open faces within a distance considered susceptible to lateral spreading; therefore, the potential for lateral spreading to affect the project site is low.

Paleontological or Geological Features

Most of Hayward is located on Quaternary sedimentary deposits which are from the most recent geologic periods dating back to 1.6 million years ago and have low potential to contain paleontological resources. However, some of eastern Hayward is located on sedimentary rocks from the Mesozoic period dating back to 245 million years ago, when dinosaurs inhabited the earth

[41] Working Group on California Earthquake Probabilities. "Uniform California Earthquake Rupture Forecast (Version 3)." Accessed September 7, 2023. http://wgcep.org/
[42] California Geological Survey. GIS Map. Accessed September 7, 2023. https://maps.conservation.ca.gov/cgs/DataViewer/

and therefore, may contain paleontological resources. There are no known paleontological resources or unique geologic features on the project site, which is located in the western portion of the City underlain by recent Quaternary sedimentary deposits.

4.7.2 Impact Discussion

For the purpose of determining the significance of the project's impact on geology and soils, would the project:

1) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
   - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42)?
   - Strong seismic ground shaking?
   - Seismic-related ground failure, including liquefaction?
   - Landslides?
2) Result in substantial soil erosion or the loss of topsoil?
3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?
4) Be located on expansive soil, as defined in the current California Building Code, creating substantial direct or indirect risks to life or property?
5) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?
6) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

4.7.2.1 *Project Impacts*

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides?

Fault Rupture

The project site is not located in an Alquist-Priolo Earthquake Fault Zone. No known surface

expression of active faults is known to cross the site.[43] Fault rupture through the site, therefore, is not anticipated.

Seismic Ground Shaking

As discussed in Section 4.7.1.2 Existing Conditions above, the project site is located in a seismically active region and would be subject to strong seismic ground shaking and seismic-related ground failure, including liquefaction in the event of a large earthquake. The Hayward Fault is located approximately 3.7 miles east of the project site. The intensity of ground shaking on-site would depend on the characteristics of the fault, distance from the fault, the earthquake magnitude and duration, and site-specific geologic conditions. The City requires projects to comply with the most recent CBC (Title 24, California Code of Regulations), which includes stringent construction requirements for projects in areas of high seismic risk based on numerous inter-related factors. Compliance with the applicable CBC sections would ensure that the potential impacts associated with ground shaking would be less than significant.

Liquefaction

The project site is located within a liquefaction hazard zone. The following applicant-proposed project design measures would be implemented prior to construction to avoid significant geologic impacts.

Impact GEO-1: The project is located within a liquefaction hazard zone, and therefore, could indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death due to seismic-related ground failure, such as liquefaction.

Applicant Proposed Project Design Measure:

PD GEO-1.1: Design Level Geotechnical Investigation. The applicant shall have a design-level geotechnical investigation prepared that includes recommendations to address and mitigate geologic hazards in accordance with the specifications of California Geological Survey Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards, and the requirements of the Seismic Hazards Mapping Act. The report will be submitted to the City prior to the issuance of building permits, and the recommendations made in the geotechnical report will be implemented as part of the project.

With implementation of PD GEO-1.1, the project would conform to the standard engineering and seismic safety design techniques outlined in the CBC and would not expose people or structures to substantial adverse effects due to liquefaction; nor would the project exacerbate existing geological hazards on-site such that it would impact (or worsen) off-site geological and soil conditions.

[43] Cornerstone Earth Group. *Preliminary Geotechnical Investigation, Eden Landing Business Park Redevelopment.* August 4, 2022.

Landslides

The project site is not located in a landslide hazard zone. The project site is relatively flat and is not located in the vicinity of any slope that could be affected by a landslide.

Overall, with implementation of PD GEO-1.1 and compliance with City and State engineering requirements, the proposed project would not directly or indirectly cause potential substantial adverse effects related to fault rupture, strong seismic ground shaking, or seismic-related ground failure. **(Less than Significant Impact)**

b) Would the project result in substantial soil erosion or the loss of topsoil?

The project site is relatively flat and is currently developed with nine one-story buildings, sidewalks, loading docks, parking and landscaping. Construction of the project would involve ground disturbing activities such as excavation of the site, grading, and trenching. Such work would increase the potential for erosion from wind or stormwater runoff. As discussed in Section 4.10 Hydrology and Water Quality, the project would not include construction activities within or adjacent to Mount Eden Creek located approximately 0.5 mile to the southwest and the project would be required to adhere to the National Pollutant Discharge Elimination System (NPDES) requirements and implement construction sediment and erosion control measures as described in PD HYD-1.1. Implementation of this PD HYD-1.1 would avoid soil erosion and would not cause a significant loss of topsoil. **(Less than Significant Impact)**

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

The project site is located within a liquefaction hazard zone; however, it is not subject to landslides or lateral spreading. With implementation of the standard engineering and seismic safety design techniques outlined in the CBC and incorporation of PD GEO-1.1, the project would not exacerbate existing geological hazards on-site. Therefore, the project would not result in impacts related to its location on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in geological hazards. **(Less than Significant Impact)**

d) Would the project be located on expansive soil, as defined in the current California Building Code, creating substantial direct or indirect risks to life or property?

Expansive soils can affect buildings and structures due to fluctuations in volume when saturated. On-site soils have moderate to high expansion potential. The preparation of the required design-level geotechnical report under PD MM GEO-1.1 and adherence to engineering recommendations during project construction would ensure the proposed project is designed to address the expansive soils on-site. For these reasons, the proposed project would not create substantial direct

or indirect risks to life or property due to the expansive soils underlying the site. **(Less than Significant Impact)**

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The proposed project would be served by the existing municipal sanitary sewer system. No alternative wastewater disposal systems, such as septic tanks, are proposed on-site. Therefore, there would be no impact due to soils incapable of supporting alternative wastewater disposal systems. **(No Impact)**

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

The project site is not known to contain any subsurface paleontological resources or unique geological features. Although unlikely, grading of the project site could result in the disturbance of previously undiscovered paleontological resources.

Impact GEO-2: Ground disturbance on the project site could result in potential impacts to unrecorded paleontological resources or geological features.

Applicant Proposed Project Design Measure:

PD GEO-2.1: Paleontology. The following measures would be incorporated into the project as applicant proposed project design measures:

- The applicant shall 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 shall 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 shall halt construction within 50 feet of any potential fossil find and notify the paleontologist, who shall evaluate its significance.
- If a fossil is encountered and determined to be significant and avoidance is not feasible, the paleontologist shall develop and implement an excavation and salvage plan in accordance with Society of Vertebrate Paleontology standards. Construction work in the immediate area shall be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains

collected shall be cleaned, repaired, sorted, and cataloged, along with copies of all pertinent field notes, photos, and maps.

- The paleontologist shall prepare a paleontological resource monitoring report that outlines the results of the monitoring program and any encountered fossils. The report shall be submitted to the City's Planning Manager for review and approval. The report and any fossil remains collected shall be submitted to a scientific institution with paleontological collections.
- Prior to the commencement of construction, the applicant shall secure the services of a qualified paleontologist specialist. The specialist shall prepare a Worker Environmental Awareness Program to instruct site workers of the obligation to protect and preserve valuable paleontological resources for review by the City's Planning Manager. This program shall be provided to all construction workers via a recorded presentation and shall 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.

With implementation of PD GEO-2.1, impacts to undiscovered paleontological resources would be reduced to a less than significant level. **(Less than Significant Impact with Mitigation Incorporated)**

4.7.2.2 *Cumulative Impacts*

Would the project result in a cumulatively considerable contribution to a cumulatively significant geology and soils impact?

The geographic area for cumulative geological impacts would be locations adjacent to the site, as geological impacts are limited to the project site and adjacent properties. All projects in the City of Hayward are required to comply with standard permit conditions to reduce construction-related erosion impacts. The project will comply with the City's General Plan policies to reduce seismic-related impacts on people and/or property. Therefore, implementation of the cumulative projects would not result in significant cumulative impact (related to geology and soils) to people and/or property. **(Less than Significant Cumulative Impact)**

4.8 Greenhouse Gas Emissions

The following discussion is based, in part, on information contained in the Air Quality Impact Assessment prepared for the project by Atmospheric Dynamics, Inc., in September 2023 (refer to Section 4.3 of this SPPE Application).

4.8.1 Environmental Setting

4.8.1.1 *Background*

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

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

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

4.8.1.2 *Regulatory Framework*

State

Assembly Bill 32 and Senate Bill 32

Under the California Global Warming Solutions Act, also known as AB 32, CARB established a statewide GHG emissions cap for 2020, adopted mandatory reporting rules for significant sources of GHGs, and adopted a comprehensive plan, known as the Climate Change Scoping Plan, identifying how emission reductions would be achieved from significant GHG sources.

In 2016, SB 32 was signed into law, amending the California Global Warming Solution Act. SB 32, and accompanying Executive Order B-30-15, require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of CO_2e ($MMTCO_2e$). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 $MMTCO_2e$.

Senate Bill 375

SB 375, known as the Sustainable Communities Strategy and Climate Protection Act, was signed into law in September 2008. SB 375 builds upon AB 32 by requiring CARB to develop regional GHG reduction targets for automobile and light truck sectors for 2020 and 2035. The per capita GHG emissions reduction targets for passenger vehicles in the San Francisco Bay Area include a seven percent reduction by 2020 and a 15 percent reduction by 2035.

Consistent with the requirements of SB 375, the Metropolitan Transportation Commission (MTC) partnered with the Association of Bay Area Governments (ABAG), BAAQMD, and the Bay Conservation and Development Commission to prepare the region's Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan process. The SCS is referred to as Plan Bay Area 2050. Plan Bay Area 2050 establishes a course for reducing per capita GHG emissions through the promotion of compact, high-density, mixed-use neighborhoods near transit, particularly within identified Priority Development Areas (PDAs).

Regional and Local

2017 Clean Air Plan

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

CEQA Air Quality Guidelines

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

Hayward 2040 General Plan

The Hayward 2040 General Plan (General Plan) includes policies for the purpose of avoiding or mitigating impacts resulting from development projects within the City. The following policies are specific to greenhouse gas emissions and are applicable to the proposed project.

Policy	Description
LU-1.1	Jobs-Housing Balance. The City shall support efforts to improve the jobs-housing balance of Hayward and other communities throughout the region to reduce automobile use, regional and local traffic congestion, and pollution.
LU-1.8	Green Building and Landscaping Requirements. The City shall maintain and implement green building and landscaping requirements for private- and public-sector developments to: • Reduce the use of energy, water, and natural resources • Minimize the long-term maintenance and utility expenses of infrastructure, buildings, and properties • Create healthy indoor environments to promote the health and productivity of residents, workers, and visitors • Encourage the use of durable, sustainably-sourced, and/or recycled building materials • Reduce landfill waste by promoting practices that reduce, reuse, and recycle solid waste
M-1.6	Bicycling, Walking, and Transit Amenities. The City shall encourage the development of facilities and services, (e.g., secure term bicycle parking, streetlights, street furniture and trees, transit stop benches and shelters, and street sweeping of bike lanes) that enable bicycling, walking, and transit use to become more widely used modes of transportation and recreation.
M-6.1	Bikeway System. The City shall maintain and implement the Hayward Bicycle Master Plan.
M-6.2	Encourage Bicycle Use. The City shall encourage bicycle use in all neighborhoods especially where short trips are most common.
M-7.10	New facilities. The City shall require developers of large projects to identify and address, as feasible the potential impacts of their projects on AC Transit ridership and bus operations as part of the project review and approval process.
M-8.1	Increase Vehicle Occupancy. The City shall work with a broad range of agencies (e.g., Metropolitan Transportation Commission, BAAQMD, AC Transit, Caltrans) to encourage and support programs that increase vehicle occupancy including the provision of traveler information, shuttles, preferential parking for carpools/vanpools, transit pass subsidies, and other methods.
M-8.2	Citywide TDM Plan. The City shall maintain and implement a citywide Travel Demand Management Program, which provides a menu of strategies and programs for developers and employers to reduce single-occupant vehicle travel in the city.

M-8.4	Automobile Commute Trip Reduction. The City shall encourage employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education, and preferential parking for carpools/vanpools.
M-8.5	Commuter Benefits Programs. The City shall assist businesses in developing and implementing commuter benefits programs (e.g., offers to provide discounted or subsidized transit passes, emergency ride home programs, participation in commuter rideshare programs, parking cash-out or parking pricing programs, or tax credits for bike commuters).
M-9.9	Alternative Fuel Vehicle Parking. The City shall require new private parking lots to grant low-carbon vehicle access to preferred parking spaces, and shall require new private parking lots to provide electric vehicle charging facilities. The City shall provide electric vehicle parking facilities in public parking lots.
NR-2.4	Community Greenhouse Gas Reduction. The City shall work with the community to reduce community-based GHG emissions by 20 percent below 2005 baseline levels by 2020, and strive to reduce community emissions by 61.7 percent and 82.5 percent by 2040 and 2050, respectively.
NR-2.6	Greenhouse Gas Reduction in New Development. The City shall reduce potential greenhouse gas emissions by discouraging new development that is primarily dependent on the private automobile; promoting infill development and/or new development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; and improving the regional jobs/housing balance ratio.
NR-4.1	Energy Efficiency Measures. The City shall promote the efficient use of energy in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.
NR-4.2	Efficient Construction and Development Practices. The City shall encourage construction and building development practices that maximize the use of renewable resources and minimize the use of non-renewable resources through the life-cycle of a structure.
NR-4.11	Green Building Standards. The City shall require newly constructed or renovated public and private buildings and structures to meet energy efficiency design and operations standards with the intent of meeting or exceeding the State's zero net energy goals by 2020.
NR-4.12	Urban Forestry. The City shall encourage the planting of native and diverse tree species to reduce heat island effect, reduce energy consumption, and contribute to carbon mitigation.
NR-6.9	Water Conservation. The City shall require water customers to actively conserve water year-round, and especially during drought years.
NR-6.12	Dual Plumbing Systems. The City shall encourage the installation and use of dual plumbing systems in new buildings to recycle greywater.
HQL-8.4	Urban Heat Island Effects. The City shall promote planting shade trees with substantial canopies, and require, where feasible, site design that uses appropriate tree species to shade parking lots, streets, and other facilities to reduce heat island effects.
HQL-9.6	Energy Resiliency. The City shall continue to encourage residents and businesses to use less gasoline for transportation, and improve energy efficiency in and renewable energy generation from buildings and industry processes to reduce impacts from rising oil and energy prices.
PFS-3.17	Bay-Friendly landscaping. The City shall promote landscaping techniques that use native and climate appropriate plants, sustainable design and maintenance, water efficient irrigation systems, and yard clipping reduction practices.
PFS-7.12	Construction and Demolition Waste Recycling. The City shall require demolition, remodeling and major new development projects to salvage or recycle asphalt and concrete and all other nonhazardous construction and demolition materials to the maximum extent practicable.

City of Hayward Climate Action Plan

The City of Hayward's Climate Action Plan (CAP) was adopted in 2009 and incorporated into the 2040 General Plan in 2014. In 2020, the City Council approved a General Plan amendment to set Hayward's GHG reduction targets to:

- 20 percent below 2005 baseline levels by 2020,
- 62.7 percent below 2005 baseline levels by 2040, and
- 82.5 percent below 2005 baseline levels by 2050.

4.8.1.3 *Existing Conditions*

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

The existing buildings on-site are currently occupied. GHG emissions are generated by automobiles traveling to and from the site and from lighting, heating, and cooling of the existing buildings, as well as related to the consumption of water, the treatment of wastewater, and disposal of solid waste at the site.

4.8.2 Impact Discussion

For the purpose of determining the significance of the project's impact on greenhouse gas emissions, would the project:

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Significance Criteria

BAAQMD CEQA Guidelines include recommended thresholds for use in determining whether projects would have significant adverse environmental impacts. BAAQMD has adopted a numeric threshold of 10,000 MTCO2e/yr for projects that include stationary sources requiring permits from the BAAQMD. Given that the project would include standby generators requiring BAAQMD permits to operate, the significance threshold applicable to stationary source emissions from the project is 10,000 MTCO2e/yr. This BAAQMD threshold is consistent with stationary source thresholds adopted by other air quality management districts throughout the state. According to BAAQMD CEQA guidelines, the 10,000 MTCO2e/yr threshold is expected to capture 95 percent of the stationary source sector GHG emissions in the Bay Area. The five percent of emissions that are from stationary source projects below the 10,000 MTCO2e/yr threshold account for a small portion of

the Bay Area's total GHG emissions from stationary sources and these emissions come from very small projects. According to BAAQMD, such small stationary source projects would not significantly add to the global problem of climate change, and they would not hinder the Bay Area's ability to reach the AB 32 goal in any significant way, even when considered cumulatively. New permit applications to BAAQMD for stationary sources that comply with the quantitative threshold of 10,000 MTCO2e/yr would not be considered "cumulatively considerable" because they also would not hinder the state's ability to meet greenhouse gas emissions goals pursuant to AB 32. The AB 32 Scoping Plan measures, including the cap-and-trade program, provide for necessary emissions reductions from the stationary source sector to achieve AB 32 2020 goals.

Other project-related emissions from mobile sources, area sources, energy use and water use, would not be included for comparison to this threshold, based on guidance in the BAAQMD's CEQA Guidelines. Instead, GHG impacts from all other project-related emission sources would be considered to have a less-than-significant impact if the project is consistent with the BAAQMD's GHG Thresholds for Land Use Projects (as shown below) and applicable regulatory programs and policies adopted by ARB or other relevant California agencies.

BAAQMD GHG Thresholds for Land Use Projects (Must Include A or B)

A. Projects must include, at a minimum, the following project design elements:
    1. Buildings
        a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
        b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
    2. Transportation
        a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
            i. Residential projects: 15 percent below the existing VMT per capita
            ii. Office projects: 15 percent below the existing VMT per employee
            iii. Retail projects: no net increase in existing VMT
        b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.
B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

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

Construction Emissions

Construction activities associated with the proposed project would result in temporary GHG emissions. Construction-related GHG emissions vary depending on the level of activity, length of construction period, specific construction operations, types of equipment, and number of personnel. Neither the City of Hayward nor BAAQMD has established a quantitative threshold or standard for determining whether a project's construction related GHG emissions are significant. Project construction would occur over a period of approximately 22 months and include use of equipment for grading, excavation, trenching, building construction, and landscaping, resulting in total emissions of 975 short tons (or 885 metric tons) of CO2e. Project construction would not result in a permanent increase in emissions since construction-related GHG emissions would cease upon completion of the development.

Stationary Source Emissions

As shown in the emissions calculations in Table 4.3-8 in Section 4.3 Air Quality, the project's annual GHG emissions from testing and maintenance of the backup generators would be 2,801 short tons (or 2,541 metric tons). This is below the BAAQMD threshold of 10,000 MTCO2e/yr and is, therefore, less than significant.

Operational Emissions

Per CEQA Guidelines Section 15064(b), the determination of whether a project may have a significant effect on the environment calls for careful judgement on the part of the Lead Agency and must be based to the extent possible on scientific and factual data. In April 2022, BAAQMD adopted new CEQA thresholds for evaluating the significance of climate impacts from land use projects and plans. Pursuant to the latest CEQA Air Quality Guidelines and GHG thresholds of significance if a project does not include natural gas infrastructure, does not result in wasteful or inefficient use of energy, meets a locally adopted Senate Bill 743 VMT target, and complies with CALGreen Tier 2 off-street electric vehicle requirements, it will not make a cumulatively considerable contribution to global climate change and would, therefore, have a less than significant GHG emissions impact under CEQA.

The project would include all electric building construction and EV charging infrastructure consistent with or in excess of CALGreen Tier 2 standards. As discussed in Section 4.6 Energy, the project would not represent a wasteful or inefficient use of energy resources. In addition, as discussed in Section 4.17 Transportation, the project would meet a locally adopted SB 743 VMT target. Therefore, operation of the project would not exceed the BAAQMD threshold of significance for GHG emissions and would not interfere with the implementation of SB 32 in 2030. **(Less than Significant Impact)**

While not required by any law, regulation, or requirement to mitigate any significant project impact, the project includes the following Project Design Measure as a voluntary commitment to reduce indirect GHG emissions associated with electricity consumption.

PD GHG-1.1: The Project owner shall participate in PG&E's Regional Renewable Choice (i.e., 100% carbon-free electricity) for electricity accounts associated with the project, or participate in a clean energy program that accomplishes the same goal of 100% carbon-free electricity.

While not required by any law, regulation, or requirement to mitigate any significant project impact, the project also includes the following Proposed Design Measure as a voluntary commitment to the use or renewable diesel as its primary fuel source for the backup generating facilities.

PD GHG-1.2: The project applicant shall use renewable diesel fuel for the diesel-fired generators to the extent feasible. During an emergency where renewable diesel fuel supplies may be limited, the project owner will document their efforts to secure other vendors of renewable diesel fuel prior to refueling with non-renewable diesel. The project applicant shall provide such documentation to the City of Hayward Director of Development Services.

b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Hayward General Plan and Climate Action Plan

As noted in Section 4.8.1.2 above, the City of Hayward's CAP was adopted in 2009 and incorporated into the 2040 General Plan in 2014. A number of General Plan/CAP policies applicable to the proposed project would reduce GHG emissions associated with the project. These measures and the project's consistency with them are discussed in Table 4.8-1 below.

Table 4.8-1: General Plan and Climate Action Plan Consistency

Policy	Description	Consistency
LU-1.1	Jobs-Housing Balance. The City shall support efforts to improve the jobs-housing balance of Hayward and other communities throughout the region to reduce automobile use, regional and local traffic congestion, and pollution.	The project would result in a net decrease of jobs on the site, but would be located within an area of the City with low VMT per employee. Therefore, the project would reduce automobile, regional and local traffic congestion, and pollution.
LU-1.8	Green Building and Landscaping Requirements. The City shall maintain and implement green building and landscaping requirements for private- and public-sector developments to:	The project would be built to CALGreen standards which includes design provisions intended to minimize wasteful energy consumption. The project would also utilize 100% carbon-free electricity and renewable diesel fuel.

	• Reduce the use of energy, water, and natural resources • Minimize the long-term maintenance and utility expenses of infrastructure, buildings, and properties • Create healthy indoor environments to promote the health and productivity of residents, workers, and visitors • Encourage the use of durable, sustainably-sourced, and/or recycled building materials • Reduce landfill waste by promoting practices that reduce, reuse, and recycle solid waste	
M-1.6	Bicycling, Walking, and Transit Amenities. The City shall encourage the development of facilities and services, (e.g., secure term bicycle parking, streetlights, street furniture and trees, transit stop benches and shelters, and street sweeping of bike lanes) that enable bicycling, walking, and transit use to become more widely used modes of transportation and recreation.	The project would include 10 bicycle parking spaces, consistent with City requirements, and on-site pedestrian paths to encourage bicycling and walking in the project area. Therefore, the project is consistent with this measure.
M-6.2	Encourage Bicycle Use. The City shall encourage bicycle use in all neighborhoods especially where short trips are most common.	The project would include 10 bicycle parking spaces, consistent with City requirements to encourage bicycling in the project area. Therefore, the project is consistent with this measure.
M-7.10	New facilities. The City shall require developers of large projects to identify and address, as feasible the potential impacts of their projects on AC Transit ridership and bus operations as part of the project review and approval process.	As discussed in Section 4.17 Transportation, the Transportation Impact Analysis prepared for the project included an analysis of the project's impacts on transit ridership and transit facilities. The proposed project is expected to generate very few trips via transit services, which can be accommodated by the existing transit capacity. Therefore, the project would not conflict with or impede implementation of a program, plan, ordinance, or policy addressing transit facilities.
M-8.4	Automobile Commute Trip Reduction. The City shall encourage employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education, and preferential parking for carpools/vanpools.	As discussed in Section 4.17 Transportation, the project site is located in a low-VMT area and would result in a less than significant VMT impact. For these reasons, this policy is not applicable to the project.
M-8.5	Commuter Benefits Programs. The City shall assist businesses in developing and implementing commuter benefits programs (e.g., offers to provide discounted or subsidized transit passes, emergency ride home programs, participation in commuter rideshare programs, parking cash-out or parking pricing programs, or tax credits for bike commuters).	As discussed in Section 4.17 Transportation, the project site is located in a low-VMT area and would result in a less than significant VMT impact. For these reasons, this policy is not applicable to the project.

M-9.9	Alternative Fuel Vehicle Parking. The City shall require new private parking lots to grant low-carbon vehicle access to preferred parking spaces, and shall require new private parking lots to provide electric vehicle charging facilities. The City shall provide electric vehicle parking facilities in public parking lots.	The proposed project would include three electric vehicle charging stations and 18 electric vehicle capable spaces to encourage the use of low-carbon vehicles.
NR-2.4	Community Greenhouse Gas Reduction. The City shall work with the community to reduce community-based GHG emissions by 20 percent below 2005 baseline levels by 2020, and strive to reduce community emissions by 61.7 percent and 82.5 percent by 2040 and 2050, respectively.	As discussed under Checklist Question a) above, the project would include all project design elements required as part of the BAAQMD threshold of significance for greenhouse gas emissions. Therefore, the project would be aligned with the state's goal of achieving carbon neutrality by 2045.
NR-2.6	Greenhouse Gas Reduction in New Development. The City shall reduce potential greenhouse gas emissions by discouraging new development that is primarily dependent on the private automobile; promoting infill development and/or new development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; and improving the regional jobs/housing balance ratio.	The project would be constructed to CALGreen standards and would be located within an area of the City with low VMT per employee. For these reasons, the project would be consistent with this measure.
NR-4.1	Energy Efficiency Measures. The City shall promote the efficient use of energy in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.	The proposed buildings would be all electric, designed to meet CALGreen requirements for energy efficiency, and utilize recycled or responsibly sourced building materials. Therefore, the project would be consistent with this measure.
NR-4.2	Efficient Construction and Development Practices. The City shall encourage construction and building development practices that maximize the use of renewable resources and minimize the use of non-renewable resources through the life-cycle of a structure.	The proposed buildings would be all electric, designed to meet CALGreen requirements for energy efficiency, include EV charging infrastructure, and utilize recycled or responsibly sourced building materials. Therefore, the project would be consistent with this measure.
NR-4.11	Green Building Standards. The City shall require newly constructed or renovated public and private buildings and structures to meet energy efficiency design and operations standards with the intent of meeting or exceeding the State's zero net energy goals by 2020.	The proposed buildings would be all electric, designed to meet CALGreen requirements for energy efficiency, and utilize recycled or responsibly sourced building materials. Therefore, the project would be consistent with this measure.
NR-4.12	Urban Forestry. The City shall encourage the planting of native and diverse tree species to reduce heat island effect, reduce energy consumption, and contribute to carbon mitigation.	The project would plant 46 trees and water efficient landscaping plants and shrubs throughout the site to reduce the heat island effect. Therefore, the project would be consistent with this measure.
NR-6.9	Water Conservation. The City shall require water customers to actively conserve water	The project would be designed to meet CALGreen requirements for building efficiency including use of water efficient plumbing fixtures and would utilize water efficient landscaping

	year-round, and especially during drought years.	plants and irrigation systems to reduce water demand on-site. Therefore, the project would be consistent with this measure.
NR-6.12	Dual Plumbing Systems. The City shall encourage the installation and use of dual plumbing systems in new buildings to recycle greywater.	This policy requires action on the part of the City. The City does not currently have a program to support use of dual plumbing and greywater use within buildings. For this reason, the measure is not applicable to the proposed project.
HQL-8.4	Urban Heat Island Effects. The City shall promote planting shade trees with substantial canopies, and require, where feasible, site design that uses appropriate tree species to shade parking lots, streets, and other facilities to reduce heat island effects.	The project would plant 46 trees and water efficient landscaping plants and shrubs throughout the site to reduce heat island effect. Therefore, the project would be consistent with this measure.
HQL-9.6	Energy Resiliency. The City shall continue to encourage residents and businesses to use less gasoline for transportation, and improve energy efficiency in and renewable energy generation from buildings and industry processes to reduce impacts from rising oil and energy prices.	The project would include installation of three EV charging stations and 18 EV capable spaces on-site to reduce gasoline use for transportation. Therefore, the project is consistent with this measure.
PFS-3.17	Bay-Friendly landscaping. The City shall promote landscaping techniques that use native and climate appropriate plants, sustainable design and maintenance, water efficient irrigation systems, and yard clipping reduction practices.	The project would plant 46 trees and water efficient landscaping plants and shrubs throughout the site to reduce heat island effect. Therefore, the project would be consistent with this measure.
PFS-7.12	Construction and Demolition Waste Recycling. The City shall require demolition, remodeling and major new development projects to salvage or recycle asphalt and concrete and all other nonhazardous construction and demolition materials to the maximum extent practicable.	The project would comply with City and state waste construction waste diversion requirements and utilize recycled or responsibly sourced building materials. Therefore, the project is consistent with this measure.

For the reasons discussed in the table above, the project would be consistent with all applicable measures of the City of Hayward's General Plan/CAP and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Bay Area 2017 Clean Air Plan (CAP)

The Bay Area 2017 Clean Air Plan includes performance objectives, consistent with the state's climate protection goals under AB 32 and SB 375, designed to reduce 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 are included in the design and operation of the on-site electrical and mechanical systems. Additionally, as described above, the project would participate in a clean energy program that accomplishes 100% carbon-free electricity for the project. This would be consistent with the general purpose of Energy and Climate Measure (ECM)-1 – Energy Efficiency in the 2017 Bay Area Clean Air Plan.

Plan Bay Area 2040/California SB 375

Under the requirements of SB 375, the MTC and ABAG developed a Sustainable Communities Strategy (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 the project 2005 emissions. However, these emission reduction targets are intended for land use and transportation strategies only. As described in Section 4.17 Transportation, the project would 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. The project's GHG emissions are predominantly from electricity usage. Because all electricity supplied to the project by PG&E would be subject to the RPS requirements promulgated under SB 100, the project would not conflict with plans, policies, or regulations adopted pursuant to SB 100.

ARB Scoping Plan

The ARB Scoping Plan outlines the State's plan for achieving the emissions reductions necessary to meet the 2030 emission target set by SB 32. As described above, the project's stationary source emissions are under relevant thresholds set by BAAQMD. Additionally, the project would utilize 100% carbon-free electricity, resulting zero emissions related to electricity consumption. The project, therefore, would be consistent with the ARB Scoping Plan.

Conclusion

With implementation of the efficiency measures to be incorporated into the project and the implementation of PD GHG-1.1 and PD GHG-1.2, GHG emissions related to the project would be consistent with applicable plans and policies adopted to reduce GHG emissions and would be required to comply with all regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The project, therefore, would not conflict with an applicable plan, policy or regulation for GHG reductions. **(Less than Significant Impact)**

4.8.2.1 *Cumulative Impacts*

Would the project result in a cumulatively considerable contribution to a significant cumulative GHG emissions impact?

As discussed in Section 4.8.2.1, GHG emissions worldwide contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single land use project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and foreseeable future projects in Hayward, the entire state of California, and across the nation and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts. The above analysis of the project's GHG emissions impacts is, therefore, also necessarily an analysis of the project's contribution to cumulative GHG emissions impacts. **(Less than Significant Cumulative Impact)**