BOWERS BACKUP GENERATING FACILITY

Draft Environmental Impact Report

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DRAFT ENVIRONMENTAL IMPACT REPORT

Bowers Backup Generating Facility

(22-SPPE-01)

Lead Agency

California Energy Commission

August 2023

Table of Contents

Section 1

Summary

1 Summary

This environmental impact report (EIR) has been prepared by the California Energy Commission (CEC) to evaluate the potential environmental effects of the development of the Bowers Backup Generating Facility (BBGF) (22-SPPE-01), in compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines, the Warren-Alquist Act, and California Code of Regulations, Title 20, Division 2, Article 5 – Small Power Plant Exemptions (SPPE). The BBGF includes diesel-fired generators (to provide emergency backup power) that would be part of the Bowers Data Center (BDC). The BBGF, the BDC, and related utility infrastructure, together constitute the "project" under the CEQA.

The CEC has the exclusive authority to certify all thermal power plants (50 megawatts [MW] and greater) and related facilities proposed for construction in California. The SPPE process allows applicants with facilities not exceeding 100 MW to obtain an exemption from the CEC's jurisdiction and proceed with local permitting rather than requiring the CEC's certification. The CEC can grant an exemption if it finds that the proposed facility would not create a substantial adverse impact on the environment or energy resources. Public Resources Code section 25519(c) designates the CEC as the lead agency, in accordance with CEQA, for all facilities seeking an SPPE.

1.1 Project Summary

GI Partners (applicant) filed an application with the CEC seeking an exemption from the CEC's jurisdiction for the BBGF. The proposed project site encompasses approximately 5.12 acres located at 2805 Bowers Avenue in Santa Clara, California, Assessor Parcel Number 216-28-063. The project would include a four-story data center building (approximately 244,068 square feet), a 72 MW emergency backup generating facility, a new electrical substation, switchgear and distribution cabling to interconnect the generators to their respective portion of the building, surface parking, landscaping, and utility pipeline connections.

To provide reliable operation of the data center, the project includes 32 3-MW Tier 4 compliant renewable diesel-fired emergency backup generators to provide electrical power to support the data center in case of a loss of utility power, and, additionally, to support redundant critical cooling equipment and other general building and life safety services. The project also includes an onsite 72 MVA electrical substation, that would be located in the southeastern corner of the project site, that would be looped to the existing Silicon Valley Power (SVP) Uranium Substation 60 kilovolt (kV) transmission feeder, located adjacent to the site. There would be up to three new transmission poles anticipated to be performed as tie-in which would be located on the project site.

Utility interconnections for domestic water, recycled water, fire water, irrigation water, storm drain, sanitary sewer, and fiber connections would be made to existing City of Santa Clara (City) infrastructure along Bowers Avenue. A 12-inch diameter domestic potable water line operated by the City in Bowers Avenue that is located along the

frontage of the property would serve as the primary source for potable and fire supply to the project. The project would require an offsite linear for a 2,600-foot offsite recycled water pipeline extension.

1.2 Summary of Environmental Impacts and Mitigation Measures

The mitigation measures would be enforced by the appropriate responsible agency under CEQA, which includes the City.

Below is an overview of the analysis included in **Section 4 Environmental Setting, Environmental Impacts and Mitigation**. Impacts are categorized by the type of impact as follows:

- No Impact. The scenario in which no adverse physical changes to (or impacts on) the environment would be expected.
- Less Than Significant Impact. An impact that would not exceed the defined significance criteria or would be eliminated or reduced to a less than significant level through implementation of the applicant's project measures and/or compliance with existing federal, state, and local laws and regulations.
- Less Than Significant with Mitigation Incorporated. An impact that would be reduced to a less than significant level through implementation of the identified mitigation measure(s).
- Significant and Unavoidable Impact. An adverse effect that meets the significance criteria, but there appears to be no feasible mitigation available that would reduce the impact to a less than significant level. In some cases, mitigation may be available to lessen a given impact, but the residual effects of that impact would continue to be significant even after implementation of the mitigation measure(s).

Staff concludes that with the implementation of the following mitigation measures presented below, significant impacts identified in this EIR would be avoided or reduced to less than significant levels. Staff concluded that impacts in the areas of Air Quality, Biological Resources, Cultural and Tribal Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, and Transportation would be potentially significant, but with mitigation measures would be reduced to less than significant. Aesthetics, Energy and Energy Resources, Hydrology and Water Quality, Land Use and Planning, Noise, Population and Housing, Public Services, Recreation, and Utilities and Service Systems would have less than significant impacts from the project. Agriculture and Forestry Resources, Mineral Resources, and Wildfire would have no impact from the project. The following summarizes the project's significant impacts and the mitigation required to reduce these impacts to less than significant:

Air Quality. *Less Than Significant with Mitigation Incorporated*. The project's construction emissions would be lower than the applicable significance thresholds for all criteria pollutants established by the Bay Area Air Quality Management District (BAAQMD). For other construction emissions without a numerical threshold of significance, specifically

non-exhaust PM10 and PM2.5 emissions from fugitive dust from construction equipment, staff proposes mitigation measure **AQ-1**, requiring best management practices which would bring the project in line with BAAQMD standards, so that impacts to the general population and sensitive populations would be reduced to less than significant.

AQ-1: To ensure that fugitive dust impacts are less than significant, the project will implement the Bay Area Air Quality Management District (BAAQMD) recommended Best Management Practices (BMPs) during the construction phase, the project owner shall implement a construction emissions control plan that has been reviewed and approved by the Director or Director's designee of the City of Santa Clara Community Development Department prior to the issuance of any grading or building permits, whichever occurs earliest. These BMPs are incorporated into the design of the project and will include:

- Water all exposed areas (e.g., parking areas, graded areas, unpaved access roads) twice a day.
- Maintain a minimum soil moisture of 12% in exposed areas by maintaining proper watering frequency.
- Cover all haul trucks carrying sand, soil, or other loose material.
- Suspend excavation, grading, and/or demolition activities when average wind speed exceeds 20 miles per hour.
- Pave all roadways, driveways, and sidewalks as soon as possible. Lay building pads as soon as grading is completed, unless seeding or soil binders are used.
- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction with a maximum 50 percent air porosity.
- Use a power vacuum to sweep and remove any mud or dirt-track next to public streets if visible soil material is carried onto the streets.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- Minimize idling time for all engines by shutting engines when not in use or limiting idling time to a maximum of five minutes. Provide clear signage for construction workers at all access points.
- Properly tune and maintain construction equipment in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and name of the person to contact regarding dust complaints and the BAAQMD telephone number. The contact person shall implement corrective measures, as needed, within 48 hours, and the BAAQMD shall be informed of any legitimate complaints received to verify compliance with applicable regulations. Limit simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
- Minimize idling time of diesel-powered construction vehicles to two minutes.

- As a condition of contract, require all on-road heavy-duty trucks to be zero emissions or meet the most stringent emissions standard, such as model year (MY) 2024 to 2026, as available. Use grid power for construction activities whenever possible; if grid power is not available, use alternative power such as battery storage, hydrogen fuel cells, or renewable fuels. If no other options are available, use Final Tier 4 diesel generators.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- All off-road equipment greater than 25 horsepower (hp) shall have engines that meet or exceed Tier 4 final off-road emission standards. Use of zero-emission and hybrid-powered equipment is encouraged.

Biological Resources. *Less Than Significant with Mitigation Incorporated*. The project would not adversely affect any species identified as 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), with mitigation incorporated. Staff proposes mitigation measures **BIO-1**, which requires pre-construction surveys for nesting birds and the implementation of nest buffers, and **BIO-2**, which requires conducting bat clearance surveys prior to the demolition of the existing buildings or removal of trees. If bats are detected during surveys, **BIO-2** requires the development of a Bat Mitigation and Monitoring Plan, which details exclusion methods, roost removal procedures, and compensatory mitigation methods for permanent impacts for roost removal.

The implementation of mitigation measures **BIO-1** and **BIO-2** would ensure all impacts to bird and bat species are reduced to less than significant.

BIO-1: Avoid and Minimize Impacts to Protected Bird Species

If initial demolition and construction activities, including tree, shrub, or vegetation removal, are to occur during the breeding season February 1st to August 31st inclusive, a qualified biologist, approved by the City of Santa Clara, shall conduct pre-construction surveys for nesting protected birds onsite and within 250 feet (for raptors) of the site, where accessible. The survey shall occur no more than 7 days prior to the onset of ground disturbance if disturbances are to commence between February 1st and June 30th and no more than 14 days prior to the onset of ground disturbance between July 1st and August 31st. Additional follow-up surveys may be required if a period of construction inactivity exceeds two weeks in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation.

If a nesting protected bird is detected, an appropriate construction-free buffer (typically 250 feet for non-raptors to 500 feet for raptors) shall be established in consultation with the California Department of Fish and Wildlife (CDFW). The actual size of the buffer, which shall be determined by the project's qualified biologist, would depend on species, topography, and type of activity that would occur in the vicinity of the nest. The

appropriate buffer zone will be marked in the field with exclusion fencing, within which no construction, tree removal, or vegetation clearing shall commence until the qualified biologist verifies that the nest(s) are no longer active. The project buffer would be monitored periodically by the project biologist to verify compliance. After the nest is completed, as determined by the biologist, the buffer would no longer be required. If an active bird nest is discovered during demolition or construction, then a buffer zone shall be established under the guidelines specified.

The applicant shall submit a report indicating the results of the survey and any designated buffer zones to the satisfaction of the City of Santa Clara's Director of Community Development prior to the issuance of permits for tree removal, demolition, or grading. The report(s) shall contain maps showing the location of all nests, species nesting, status of the nest (e.g., incubation of eggs, feeding of young, near fledging), and the buffer size around each nest (including reasoning behind any alterations to the initial buffer size). The report shall be provided within 10 days of completing a pre-construction nest survey.

BIO-2: Avoid and Minimize Impacts to Bat Species

If suitable roosting habitat for special-status bats will be affected by project construction (e.g., removal of buildings, removal of trees), a qualified wildlife biologist shall conduct surveys for special-status bats during the appropriate time of day to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days prior to beginning tree removal and/or demolition or ground disturbance. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (e.g., Anabat, etc.). Visual surveys shall include trees and structures within 50-feet of construction activities. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study and no further mitigation is required.

If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts.

If roosts or a maternity colony are determined to be present and must be removed, the bats shall be excluded from the roosting site before the tree or structure is removed. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter) or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young).

If roosts cannot be avoided or it is determined that construction activities may cause roost abandonment, such activities shall not commence until permanent, elevated bat houses have been installed outside of, but near, the construction area. Placement and height will be determined by a qualified wildlife biologist, but the height of bat house shall be at least 15 feet. Bat houses shall be multi-chambered and be purchased or constructed in accordance with California Department of Fish and Wildlife (CDFW) standards. The

number of bat houses required shall be dependent upon the size and number of colonies found, but at least one bat house shall be installed for each pair of bats (if occurring individually) or of a sufficient number to accommodate each colony of bats to be relocated.

If bat roosts are detected, then a Bat Mitigation and Monitoring Plan (Plan) shall be prepared and implemented to mitigate for the loss of roosting habitat. The Plan shall include information pertaining to the species of bat and location of the roost, exclusion methods and roost removal procedures, compensatory mitigation for permanent impacts (including specific mitigation ratios and location of proposed mitigation as described in the above bullet) and monitoring to assess bat use of mitigation areas. This Plan shall be submitted to the City of Santa Clara and CDFW for review and approval prior to project activities that would disturb roosting bats.

Cultural and Tribal Cultural Resources. *Less Than Significant with Mitigation Incorporated*. The project would not impact any known resources that could meet CEQA's criteria for historical resources, unique archaeological resources, or tribal cultural resources. However, previous cultural resources studies in the project area indicate that buried archaeological or ethnographic resources could be encountered during ground disturbing activities at the site. The CEC staff recommends nine mitigation measures, **CUL-1** through **CUL-9**, to address the inadvertent discovery of previously unknown cultural resources, including human remains. **CUL-1** requires that a qualified archaeologist prepare a Cultural Resources Identification, Monitoring, and Treatment Plan in consultation with the Tamien Nation and a qualified Native American monitor, to ensure that potential impacts to any as-yet unidentified cultural resources are reduced to a less-than-significant level. **CUL-2** requires qualified specialists and Native American monitors to prepare a workforce environmental awareness program, or WEAP, to instruct construction workers of the obligation to protect and preserve buried archaeological and Native American resources that could be encountered during construction. It includes instructions regarding the need to halt work in the vicinity of potential archaeological and Native American resources that could be encountered. Mitigation measure **CUL-3** requires that a preliminary field investigation be conducted by a qualified archaeologist and Native American monitor to determine if cultural deposits are present once pavement is removed and soils are accessible for inspection. **CUL-4** requires that all ground disturbing activities be completed under the observation of a qualified archaeologist and Native American monitor and provides for the cultural resources monitors to have the authority to temporarily halt construction activities within a 50-foot radius of finds. **CUL-5** specifies the procedures for documenting and evaluating cultural resources finds made during the preliminary field investigation, grading, or other construction activities. Further, **CUL-5** requires that a qualified archaeologist make recommendations to the Santa Clara Director of Community Development regarding data recovery, curation, or other appropriate mitigation.

Mitigation Measure **CUL-6** specifies procedures for the event that human remains are discovered. **CUL-7** affords for the installation of security fencing onsite, to avoid

destruction or theft of cultural resources, at the discretion of the City of Santa Clara's Director of Community Development and requires the qualified archaeologist and Native American monitor to advise the Director of Community Development on security measures to be taken to ensure the safety of any cultural resources. **CUL-8** requires that the project owner or its representative prepare a closing cultural resources report summarizing the results of the field investigations, data recovery activities and results, and compliance with the Cultural Resources Identification, Monitoring, and Treatment Plan once all analyses and studies required have been completed. **CUL-9** requires that all archaeological cultural resources recovered and not identified as tribal cultural resources be transferred to a long-term curation facility, and all Native American/tribal cultural resources and artifacts be reburied onsite, if feasible and if requested by the Native American representative. Combined, mitigation measures **CUL-1** through **CUL-9** would reduce impacts on buried historical resources to a less-than-significant level.

CUL-1: Cultural Resources Identification, Monitoring, and Treatment Plan

Prior to the issuance of any grading permit, a project-specific Cultural Resources Identification, Monitoring, and Treatment Plan (Plan) shall be prepared. The Plan shall be prepared by a Secretary of the Interior-qualified archaeologist, in consultation with the Tamien Nation and a qualified Native American monitor registered with the Native American Heritage Commission (NAHC) with an interest in the city of Santa Clara and that is traditionally and culturally affiliated with the geographic area. The Plan shall reflect permit-level detail pertaining to depths and locations of all ground disturbing activities. The Plan shall be prepared and submitted to the City of Santa's Clara Director of Community Development prior to approval of any grading permit. The Plan shall contain, at a minimum:

- Identification of the scope of work and range of subsurface effects (including location map and development plan), including requirements for preliminary field investigation and construction monitoring.
- Description of the environmental setting (past and present) and the historic, California Native American archaeological, and ethnographic background of the parcel (potential range of what might be found).
- Development of research questions and goals to be addressed by the investigation (what is significant vs. what is redundant information).
- Detailed field strategy (including the preliminary field investigation) used to identify cultural deposits, record, recover, or avoid the finds and address research goals.
- Analytical methods.
- Handling and preservation of cultural materials.
- Report structure of the closing cultural resources report including a confidential technical report and layperson's report and an outline of document contents in one year of completion of construction (provide a draft for review before a final report).

- Disposition of the artifacts, including identification of potential reburial location(s) on site.
- Appendices: all site records, correspondence, and consultation with Native Americans, etc.

CUL-2: Worker Environmental Awareness Program Training

Prior to issuance of the grading permit by the City of Santa Clara's Community Development Department, and for the duration of ground disturbance, the project shall be required to submit evidence that Worker Environmental Awareness Program (WEAP) training was held for all existing and any new employees. The training shall be facilitated by the project archaeologist in coordination with a Native American representative registered with the Native American Heritage Commissions with an interest in the city of Santa Clara and that is traditionally and culturally affiliated with the geographic area as described in Public Resources Code, section 21080.3. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed, and instructions to halt work in the vicinity of any potential cultural resource discovery, and notify the City-approved archaeologist and Native American cultural resources monitor. The Native American monitor shall provide a Tribal Cultural Resources Sensitivity Training in conjunction with the WEAP.

CUL-3: Preliminary Field Investigations

After removal of pavement at the project site and prior to grading, a Secretary of the Interior-qualified archaeologist and qualified Native American monitor shall conduct a pedestrian survey over the exposed soils to determine if any surface archaeological manifestations are present. Prior to issuance of any grading or demolition permits, the project applicant shall complete a preliminary field investigation program in conformance with the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan required under **CUL-1**. Results of the investigation shall be provided to the City of Santa Clara's Director of Community Development prior to issuance of any grading permit. If any finds were discovered during the preliminary field investigation, the project archaeologist shall implement **CUL-5** for evaluation and recovery methodologies. The results of the preliminary field investigation shall be submitted to the Director of Community Development for review and approval prior to issuance of any grading permit. The California Department of Parks and Recreation 523 series forms shall be submitted along with the report for any cultural resources encountered over 50 years old.

CUL-4: Construction Monitoring and Protection Measures

All ground-disturbing activities (e.g., grading and excavation) shall be completed under the observation of a Secretary of the Interior-qualified archaeologist and a qualified Native American monitor, registered with the Native American Heritage Commission

(NAHC) with an interest in the city of Santa Clara. Preference in selecting Native American monitors shall be given to members of the Tamien Nation and Native Americans with:

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

The qualified archaeologist or a qualified Native American monitor, shall have authority to halt construction activities temporarily within a 50-foot radius of any cultural resources finds.

If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent, then a letter report detailing the rationale for making such a reduction and summarizing the monitoring results shall be provided to the Director of Community Development. If, for any reasons, the qualified archaeologist or a qualified Native American monitor is not present, but construction crews encounter a cultural resource, all work shall stop temporarily within 50 feet of the find until a qualified archaeologist in consultation with a qualified Native American monitor has been contacted to determine the proper course of action. The Director of Community Development shall be notified of any finds during the grading or other construction activities. Any human remains encountered during construction shall be treated according to the protocol identified in **CUL-6**.

CUL-5: Evaluation and Data Recovery

The City of Santa Clara's Director of Community Development shall be notified of any finds during the preliminary field investigation, grading, or other construction activities. Any historic or Native American cultural material identified in the project area during the preliminary field investigation and during grading or other construction activities shall be evaluated for eligibility for listing as a Candidate City Landmark or a California Historical Resource by a Secretary of the Interior-qualified archaeologist.

If Native American cultural materials or historic resources are encountered, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a Secretary of the Interior-qualified archaeologist shall examine the find and record the site, including field notes, measurements, and photography, and document the find using the California Department of Parks and Recreation 523 series forms. The archaeologist shall make recommendations regarding eligibility as a Candidate City Landmark and/or a California Historical Resource, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Director of Community Development has concurred with the recommendations.

Data recovery methods may include, but are not limited to, backhoe trenching, shovel test units, hand auguring, and hand-excavation. The techniques used for data recovery shall follow the protocols identified in the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan. Data recovery shall include excavation and exposure of features, field documentation, and recordation.

CUL-6: Human Remains

If human remains are discovered during the preliminary field investigation, excavation and/or grading, building, or other construction activities at the site, all activity within a 50-foot radius of the find will be stopped. The Santa Clara County Coroner will be notified and shall determine whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC) immediately. Once NAHC identifies the most likely descendants, the descendants will make recommendations regarding treatment and disposition with appropriate dignity, which will be implemented in accordance with section 15064.5(e) of the California Environmental Quality Act Guidelines. All actions taken under this mitigation measure shall comply with Health and Human Safety Code, section 7050.5(b).

CUL-7: Site Security

At the discretion of the City of Santa Clara's Director of Community Development, site fencing shall be installed on-site during the preliminary field investigation, grading, building, or other construction activities to avoid destruction and/or theft of potential cultural resources. The responsible qualified archaeologist, in consultation with a qualified Native American monitor, registered with the Native American Heritage Commission

(NAHC) with an interest in the city of Santa Clara and that is traditionally and culturally affiliated with the geographic area, shall advise the Director of Community Development as to the necessity for a security guard. The purpose of the security guard shall be to ensure the safety of any potential cultural resources (including human remains) that are left exposed overnight. The Director of Community Development shall have the final discretion to authorize the use of a security guard at the project site.

CUL-8: Closing Cultural Resources Report

Once all analyses and studies required by the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan (Plan) have been completed, the project applicant, or representative, shall prepare a closing cultural resources report summarizing the results of the preliminary field investigation, data recovery activities and results, and compliance with the Plan during all demolition, grading, building, and other construction activities. The report shall document the results of field and laboratory investigations and shall meet the Secretary of the Interior's Standards for Archaeological Documentation. The contents of the report shall be consistent with the protocol included in the project-specific Cultural Resources Treatment Plan. The report shall be submitted to the City of Santa Clara's Director of Community Development for review and approval prior to issuance of any certificates of occupancy (temporary or final). Once approved, the final documentation shall be submitted to the Northwest Information Center at Sonoma State University, as appropriate.

CUL-9: Curation

Upon completion of the closing cultural resources report required by **CUL-8**, all recovered archaeological materials not identified as tribal cultural resources by the Native American monitor, shall be transferred to a long-term curation facility. Any curation facility used shall meet the standards outlined in the National Park Service Curation of Federally Owned and Administered Archaeological Collections (36 CFR 79). The project owner shall notify the City of Santa Clara's Director of Community Development of the selected curation facility prior to the issuance of any certificates of occupancy (temporary or final). To the extent feasible, and in consultation with the Native American representative, all recovered Native American/tribal cultural resources and artifacts shall be reburied on-site in an area that is unlikely to be disturbed again. Treatment of materials to be curated shall be consistent with the protocols included in the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan. All archaeological materials recovered during the data recovery efforts shall be cleaned, sorted, catalogued, and analyzed following standard archaeological procedures, and shall be documented in a report submitted to the City of Santa Clara's Director of Community Development and the Northwest Information Center (NWIC).

Geology and Soils. *Less Than Significant with Mitigation Incorporated*. Significant paleontological resources that represent important examples of the major periods of California prehistory are known to be present in the project area. The extent of proposed ground disturbance has the potential to damage unknown, buried paleontological

resources in the project footprint. Paleontological resources may be buried beneath the ground surface in Pleistocene age sediments. If significant paleontological resources were to be exposed or destroyed, it would be a significant impact. Staff proposes mitigation measure **GEO-1**, which would require worker training to recognize paleontological resources. Staff concludes that with implementation of **GEO-1**, impacts to buried paleontological resources would be reduced to a less-than-significant level. Thus, the project therefore is unlikely to eliminate important examples of paleontological resources that are part of the prehistory of California.

GEO-1: Prior to the commencement of construction, the applicant shall secure the services of a qualified paleontological specialist. The specialist shall prepare a Worker Environmental Awareness Program (WEAP) to instruct site workers of the obligation to protect and preserve valuable paleontological resources for review by Santa Clara Community Development Department. This program shall be provided to all construction workers via a recorded presentation and shall include a discussion of applicable laws and penalties; samples or visual aids of resources that could be encountered; 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.

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 supervisors 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 will 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 Director or Director's designee of the Santa Clara Community Development Department for review and approval. The report and any fossil remains collected shall be submitted to a scientific institution with paleontological collections.

Greenhouse Gas Emissions. *Less Than Significant with Mitigation Incorporated*. With the incorporation of project features and staff's proposed mitigation measures **GHG-1** and **GHG-2**, direct and indirect GHG emissions generated by the project would be reduced to less than significant and would be consistent with the applicable plans and policies adopted to reduce GHG emissions. Mitigation Measure **GHG-1** requires

renewable diesel for 100 percent of total energy use by the emergency backup generators, and only use of ultra-low sulfur diesel as a secondary fuel. **GHG-2** requires participation in Silicon Valley Power's (SVP) Large Customer Renewable Energy (LCRE) Program or other renewable energy program that accomplishes the same objective as SVP's LCRE Program for 100 percent carbon-free electricity, or purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity. With project features and implementation of **GHG-1** and **GHG-2**, the project would comply with all regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The potential for the project to conflict with an applicable plan, policy, or regulation for GHG emissions reductions would be reduced to less than significant.

GHG-1: The project owner shall use renewable diesel for 100 percent of total energy use by the emergency backup generators, and only use ultra-low sulfur diesel (ULSD) as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. The City of Santa Clara Community Development Department (CDD) may grant temporary relief from the 100 percent renewable diesel requirement if the project owner can demonstrate a good faith effort to comply with the requirement and that compliance is not practicable. The project owner shall provide an annual report of the status of procuring and using renewable diesel to the director, or director's designee, of the City of Santa Clara CDD demonstrating compliance with the mitigation measure.

GHG-2: The project owner shall participate in SVP's Large Customer Renewable Energy (LCRE) Program or other renewable energy program that accomplishes the same objective as SVP's LCRE Program for 100 percent carbon-free electricity, or (2) purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity.

During operation, the project owner shall provide documentation to the director, or director's designee, of the City of Santa Clara Electric Utility Department of initial enrollment and shall submit annual reporting to the director, or director's designee, of the City of Santa Clara Electric Utility Department documenting either continued participation in SVP's LCRE Program of documentation that alternative measures continue to provide 100 percent carbon-free electricity as verified by an independent third-party auditor specializing in greenhouse gas emissions.

Hazards and Hazardous Materials. *Less Than Significant with Mitigation Incorporated*. During demolition activities, there is the potential that lead-based paint could be present and released. Staff proposes mitigation measure **HAZ-1** which would require the testing and removal of lead-based paint contaminated materials prior to demolition activities. Additionally, ground disturbing activities associated with the removal of underground utilities, and construction of the project would have the potential to encounter remnant or unidentified contaminated soil or groundwater. Staff proposes mitigation measure **HAZ-2** which would require a Site Management Plan to establish proper procedures to be taken when contaminated soil or groundwater is found and a

Health and Safety Plan to protect and educate workers in the event contaminated soil or groundwater is encountered. Staff proposes mitigation measure **HAZ-3** which would specify testing of soil and groundwater for contamination per plans and protocols established in the Site Management Plan. Staff concludes that with implementation of **HAZ-1, HAZ-2** and **HAZ-3**, impacts to the public or the environment due to lead-based paint or contaminated soil or groundwater would be reduced to a less than significant level.

HAZ-1: Prior to issuance of demolition permits, a lead-based paint (LBP) visual inspection and pre-demolition survey, including sampling and testing of suspect materials, shall be conducted of on-site buildings to determine the presence of LBP. The survey shall be conducted by a contractor with California Department of Public Health (CDPH) Lead Related Construction (LRC) certified personnel as required by CDPH regulations. The findings of the LBP survey shall be submitted to the Santa Clara City Fire Department Hazardous Materials Division for review.

HAZ-2: Prior to issuance of demolition or grading permits, the project applicant shall prepare a Site Management Plan (SMP) to guide activities during demolition, excavation, and initial construction to ensure that potentially contaminated soils are identified, characterized, removed, and disposed of properly. The purpose of the SMP is to establish appropriate management practices for handling impacted soil or other materials that may be encountered during construction activities. The SMP shall be reviewed and approved by the Santa Clara County Environmental Services Department and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division prior to any work on the site, including prior to soil and groundwater sampling.

The SMP shall be implemented during project demolition and construction and shall include, but shall not be limited to, the following components:

- A detailed discussion of the site background.
- Prior to any onsite work, Health and Safety Plans (HSPs) for the Project shall be prepared by all contractors and subcontractors that will be working at the project site and incorporated in the SMP. The HSPs shall be prepared by an industrial hygienist. The HSPs shall be specific to each of the contractors' or subcontractors' scopes of work and based upon the known environmental conditions for the site prior to project construction. The HSPs shall be updated as needed if site conditions change significantly, such as the discovery of contaminated soil or groundwater. The HSPs shall be approved by the Director or Director's designee with the Santa Clara County Environmental Services Department and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division, and implemented under the direction of a Site Safety and Health Officer. Copies of the approved HSPs shall be kept at the project site.
- Description of soil and groundwater testing, which shall include (but not be limited to) the collection of soil samples and groundwater samples and analyses for volatile

organic compounds (VOCs) and any other contaminants identified in previous environmental studies in the soil and groundwater and lead and organochlorine pesticides in the soil to verify presence of absence of remnant or unknown soil or groundwater contamination. This soil and groundwater characterization shall be performed prior to initiation of project construction.

- Protocols for sampling at the site to verify or rule out a vapor encroachment conditions at the site and within the buildings to be demolished and, if verified, for remediation of vapor encroachment conditions within the existing building prior to demolition and to prevent it in the proposed structures.
- Protocols for sampling of soil and groundwater to facilitate the profiling of the soil and groundwater for appropriate off-site disposal or reuse, and for construction worker safety, dust mitigation during demolition and construction and potential exposure of contaminated soil or groundwater to future users of the site prior to project construction.
- Procedures to be undertaken in the event that contamination is identified above action levels or previously unknown contamination is discovered prior to or during project demolition or construction;
- Notification procedures if previously undiscovered significantly impacted soil or groundwater, or free fuel product is encountered during demolition or construction;
- Sampling and laboratory analyses of excess soil requiring disposal at an appropriate off-site waste disposal facility;
- Procedures and protocols for the safe storage, stockpiling, and disposal of contaminated soils; and
- Protocols to manage groundwater, including segregation or treatment of contaminated groundwater, if necessary, that may be encountered during trenching or subsurface excavation activities.

If there are no contaminants identified on the project site that exceed applicable screening levels for construction workers and residential users published by the Regional Water Quality Control Board (RWQCB), California Department of Toxic Substances Control (DTSC), or California Environmental Protection Agency, the SMP does not need to be submitted to an oversight agency and instead only needs to be submitted to the Santa Clara County Environmental Health Department and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division for approval prior to issuance of a grading permit and prior to conducting any demolition activities.

If contaminants are identified at concentrations exceeding applicable screening levels, the project applicant shall obtain regulatory oversight from Santa Clara County Department of Environmental Health or the DTSC under a Site Cleanup Program. The SMP and planned remedial measures shall be reviewed and approved by the Santa Clara County Department of Environmental Health Hazardous Materials Compliance Division or DTSC. A copy of the SMP shall be submitted to the Director or Director's designee with

the Santa Clara County Environmental Services Department and, the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division. Copies of the approved SMP shall be kept at the project site.

Any contaminated soils identified by testing conducted in compliance with the SMP and found in concentrations above established thresholds shall either be removed and disposed of according to California Hazardous Waste Regulations or the contaminated portions of the site shall be capped beneath the planned development under the regulatory oversight of the Santa Clara County Hazardous Materials Compliance Division or the DTSC. Contaminated soil excavated from the site shall be hauled off-site and disposed of at a licensed hazardous materials disposal site.

HAZ-3: Prior to the issuance of grading permits, soil and/or groundwater samples shall be taken in areas where disturbance is anticipated to determine if contaminated soils or groundwater with concentrations above established construction/trench worker thresholds may be present due to historical agricultural use and from historical leaks and spills. Sampling shall be conducted per the protocols outlined in the approved project SMP. Once the soil sampling analysis is complete, a report of the findings shall be submitted to the appropriate agencies per the requirements of the SMP.

Transportation. *Less Than Significant with Mitigation Incorporated*. Project-generated vehicle miles traveled (VMT) per employee would exceed the City's industrial threshold of 14.14 VMT per employee. Staff proposes **TRANS-1,** which would require the project owner to implement Transportation Demand Management (TDM) measures, to reduce the project VMT to a less than significant level. Staff concludes that with implementation of **TRANS-1,** project generated VMT would be reduced to a level below the City's industrial VMT threshold, therefore, impacts to VMT would be reduced to a less than significant level.

TRANS-1: The project shall implement a Transportation Demand Management (TDM) program sufficient to demonstrate that vehicle miles travelled (VMT) associated with the project would be reduced to 14.14 or less per employee. The TDM program shall include, but is not limited to, the following measures, which have been determined to be a feasible method for achieving the required VMT reduction:

1. Commute Trip Reduction Marketing and Education. This TDM measure shall educate and encourage employees to use transit, shared rides, and active modes of transportation to lower the number of single occupancy vehicle trips.
2. Alternative Transportation Benefits. This TDM measure shall provide general commuter benefits to employees, which would include financial subsidies or pre-tax deductions for transit, carpooling, and vanpooling activities to encourage employees to use alternative transportation modes.
3. Ride-Sharing Program. This TDM measure shall encourage employees to carpool with other employees and through ride matching services to ensure employees are connected with other commuters traveling in the same direction.

Prior to the issuance of an occupancy permit, the TDM program shall be submitted and approved by the City of Santa Clara Director of Community Development and shall be monitored annually to gauge its effectiveness in meeting the required VMT reduction. The TDM program shall establish an appropriate estimate of initial vehicle trips generated by the occupant of the proposed project and shall include the conducting of driveway traffic counts annually to measure peak-hour entering and exiting vehicle volumes. The volumes shall be compared to trip thresholds established in the TDM program to determine whether the required reduction in vehicle trips is being met. The results of annual vehicle counts shall be reported in writing to the Director of Community Development.

If TDM program monitoring results show that the trip reduction targets are not being met, the TDM program shall be updated to identify replacement and/or additional feasible TDM measures to be implemented. The updated TDM program shall be subject to the same approvals and monitoring requirements listed above.

Summary

Based on the information and analysis described herein, staff concludes that substantial evidence exists in this record to support all of the conclusions reached regarding the impacts of the project on the environment, with and without mitigation. The CEC determines whether the project qualifies for an SPPE and if the project is granted the exemption, the project would seek permits from the local responsible agencies.

1.3 Summary of Alternatives to the Project

Section 15126.6 of the CEQA Guidelines states that the Alternatives analysis in an EIR must describe a "reasonable range of potentially feasible alternatives," focusing on those that "would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant environmental effects of the project, and evaluate the comparative merits of the alternatives."

Section 5 Alternatives provides a description of alternatives initially considered and not evaluated further, primarily due to reliability issues. The No Project/No Build Alternative (Alternative 1) and the Natural Gas Internal Combustion Engine Alternative (Alternative 2) are fully analyzed and compared to the proposed project.

1.3.1 Alternative 1: No Project/No Build Alternative

Staff evaluated a No Project scenario in which no new development of the project site would occur, and current conditions would continue at the site for an unknown period. No known development plan exists to allow a comparison with the proposed project. The No Project/No Build Alternative would avoid the proposed project's potentially significant impacts identified in this EIR (no impact compared to the proposed project). Therefore, Alternative 1 is the environmentally superior alternative. However, if the project were not constructed, the project objectives would not be attained.

1.3.2 Alternative 2: Natural Gas Internal Combustion Engine (ICE) Alternative

Under the proposed project, the emergency backup generators (gensets) would use renewable diesel as the primary fuel with ultra-low sulfur (conventional) diesel as the secondary backup fuel if renewable diesel is unavailable. Natural gas internal combustion engines, or ICEs, are fueled by natural gas.

Under Alternative 2, the footprint of the natural gas ICEs might not be the same as for the proposed project's diesel fueled gensets. The number of engines and associated equipment, height, fuel delivery, and onsite fuel storage would be different. However, the massing and locations of the data center buildings would be essentially the same as for the proposed project. Under this alternative, engine startup times would be fast enough that a redesign of the proposed project's uninterruptible power supply (UPS) system would not be needed.

Fuel for the natural gas ICEs could be supplied by the Pacific Gas and Electric (PG&E) underground transmission system. Based on PG&E's gas transmission pipeline map, there are two locations for independent natural gas pipeline connections within approximately 1½ miles of the project site; possible routes to the connection points are conceptual. Installation of gas pipelines could cause direct or indirect impacts on cultural and tribal cultural resources. Potential impacts are likely similar to those of the proposed project, and mitigation measures **CUL-1** through **CUL-9** would also reduce impacts from pipeline construction to less than significant. Due to the susceptibility of natural gas pipelines to natural disasters (e.g., earthquakes) as well as accidents, the ICE fuel delivery and storage system might provide a slightly lower level of reliability than has been demonstrated by the diesel fuel delivery and storage system for many data centers.

Staff compared criteria air pollutant and greenhouse gas emissions of natural gas ICEs to the proposed project's diesel fueled engines. Under Alternative 2, criteria air pollutant emissions and air quality impacts would be much less than those identified under the proposed project. Air toxics emissions would likely be less due to the reductions in volatile organic compounds (VOCs) and particulate matter (PM); therefore, public health impacts using natural gas ICEs would likely be less than under the proposed project. The greenhouse gas (GHG) impacts would likely be similar to those of the proposed project, but only if renewable natural gas were used for this alternative. Staff considers **Alternative 2** to be environmentally superior to the proposed project due to its reductions in criteria air pollutants.

1.4 Known Areas of Controversy

The CEC issued a Notice of Preparation on February 9, 2023, seeking input from responsible and trustee agencies and the public regarding the scope and context of environmental areas in the EIR. The comment period began on February 9, 2023, and ended on March 10, 2023. In total, two comment letters from agencies and one comment

letter from the public were received[1]. Issues of concern reflected in these letters and emails include, but are not limited to, the following:

- Air Quality and Greenhouse Gas Emissions (GHG)
  - Concerns from the public about cumulative impact of adjacent backup generating facilities
  - Because the project is in an area that is disproportionately impacted by air pollution and identified as a disadvantaged community according to the Air District's Community Air Risk Evaluation (CARE) program and State of California Senate Bill 535, the air district is concerned about the potential for any increase in air pollution exposure that could result from the project. The EIR should fully evaluate potential significant impacts and implement all feasible measures to minimize air quality impacts to the greatest extent possible
  - The EIR should estimate and evaluate the potential health risk to existing and sensitive populations near the Project area from toxic air contaminants (TAC) and fine particulate matter (PM2.5) as a result of the Project's construction and operation.
  - The GHG impact analysis should include a discussion of how the Project will implement land use and design elements to achieve the State's 2045 climate target.
  - The EIR should include various scenarios of backup power generation operations beyond routine testing and maintenance.
  - The EIR should evaluate all feasible measures, both onsite and offsite, to reduce air quality impacts to a less-than-significant level.
  - The project should implement green infrastructure and fossil fuel alternatives in the development and operation of the Project, such as solar photovoltaic (PV) panels, electric heat pump water heaters, and solar PV back-up generators with battery storage capacity, and commit to pursue carbon-free electricity service if on-site renewables do not meet the full electricity demand.
  - The EIR should evaluate the Project's consistency with the Air District's 2017 Clean Air Plan (2017 CAP).
  - Since certain aspects of the Project will require a permit (Authority to Construct/Permit to Operate) from the Air District the EIR should discuss any applicable permit requirements.
- Tribal Cultural Resources
  - Ensure that the CEC complies with Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (includes tribal consultation requirements) in its review of the proposed project. Additional comments and concerns include recommended actions to

1 Bay Area Air Quality Management District, dated 3/10/2023; Native American Heritage Commission, dated 2/17/2023; J. Montemayor dated 4/24/2023

adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources.

Staff have reviewed and considered the comments received and addressed them as appropriate in the applicable section.

1.5 Issues to be Resolved

Staff concluded that all potentially significant impacts can be mitigated to a less than significant level. There are no remaining issues to be resolved.

Section 2

Introduction

2 Introduction

2.1 Energy Commission Jurisdiction and the Small Power Plant Exemption Process

The California Energy Commission (CEC) is responsible for reviewing, and ultimately approving or denying, all thermal electric power plants, 50 megawatts (MW) and greater, proposed for construction in California. Under the authority of Public Resources Code, Section 25541, the CEC has a regulatory process, referred to as the Small Power Plant Exemption (SPPE) process, which allows applicants with facilities not exceeding 100 MW to obtain an exemption from the CEC's jurisdiction and proceed with local permitting rather than requiring a CEC license. The CEC can grant an exemption if it finds that the proposed project would not create a substantial adverse impact on the environment or energy resources. See **Appendix A** for more information about the project's jurisdictional and generating capacity analysis.

2.2 CEQA Lead Agency

In accordance with Public Resources Code, section 25519(c) and the California Environmental Quality Act (CEQA), the CEC serves as the lead agency to review an SPPE application and perform any required environmental analyses. Upon granting an exemption, the local permitting authorities—in this case the City of Santa Clara (City) and the Bay Area Air Quality Management District—would perform any follow-up CEQA analysis and impose mitigation, as necessary, for project approval.

2.3 Purpose of the Environmental Impact Report

The purpose of this environmental impact report (EIR) is to provide agency decision makers and the public with objective information regarding the project's significant effects on the environment and energy resources, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. This information will be used by the Commissioners in considering the applicant's request for an SPPE to exempt the project from the CEC's power plant licensing jurisdiction, and if exempted, by the responsible agencies for project approval and permitting.

Unlike most development project approval processes, the discretionary decision being considered by the CEC is not approval of the applicant's actual project, but whether such approval can be considered by the City. In other words, can the project be exempted from the CEC's exclusive jurisdiction over such a facility? While the CEC's environmental analysis assesses the applicant's project to support the CEC's jurisdictional decision and uses the term "project" to reference the data center and backup generators, it is important to remember that the CEC's discretionary decision does not include approval of the project. This situation is unique as most EIRs and discretionary agency decisions revolve around a decision to permit or deny the project subject to the environmental

review, i.e., an assessment of the environmental impacts of a construction project or land use plan and a decision on whether to approve the project or plan.

Upon exempting the project, the CEC would have no permitting authority over the project and would not be responsible for any mitigation or permit conditions imposed by the City or other local agencies.

2.4 Environmental Process

2.4.1 Notice of Preparation

A Notice of Preparation of the EIR was circulated to the public and public agencies from February 9, 2023 to March 10, 2023 (State Clearinghouse #2023020228). No requests for an extension to the NOP comment period were received.

2.4.2 Draft EIR

The Draft EIR will be circulated for agency and public review during a 45-day public review period prior to certification of the document by the CEC. This includes submitting the Draft EIR to the State Clearinghouse, posting the document to the project's CEC docket, and notifying interested persons on the proceeding's automated email notifications (GovDelivery) of the Draft EIR. The GovDelivery system is an automated CEC system by which information about this proceeding is emailed to persons who have subscribed.

2.4.3 Final EIR and Decision on the Small Power Plant Exemption

Substantive comments received on the Draft EIR will be formally addressed in the Final EIR. The Final EIR will be submitted to responsible agencies, commentors on the DEIR, and posted to the project's docket and project's GovDelivery system.

Following publication of the Final EIR, the CEC's executive director (or designee) will file a recommendation with the CEC whether the application meets the requirements of Public Resources Code section 25541 for an SPPE (that is, the proposed project would not create a substantial adverse impact on the environment or energy resources). As part of its decision on the SPPE, the CEC must certify that it has reviewed and considered the information in the Final EIR and that the EIR has been completed in conformity with the requirements of CEQA.

2.5 CEQA Analysis Format

The EIR is based on information from the applicant's SPPE application and associated submittals, site visits, data requests and responses, and additional staff research, including consultation with other agencies, such as responsible and trustee agencies. All

information relied on is referenced in the document, as appropriate, and available for public review in the CEC's docket for this project.

2.5.1 Notification and Coordination

Noticing of documents is governed by both the CEC's regulations set forth in California Code of Regulations Title 20 and the CEQA guidelines set forth in California Code of Regulations-Title 14. The specific noticing requirements depend on the document at issue and are described below.

2.5.1.1 Receipt of an Application for Small Power Plant Exemption

The Application for SPPE (Application for Exemption) is filed by the project applicant to initiate the exemption proceeding. As specified in Title 20, section 1936(d), which was in effect when this application was filed, staff provided notice of the Application for Exemption as set forth in Title 20, sections 1713 and 1714. Section 1713(b) requires that a summary of the Application for Exemption be sent to public libraries in the communities near the proposed site as well as libraries in Eureka, Fresno, Los Angeles, San Diego and San Francisco, and to any person who requests such mailing. As required by section 1713(c), the summary was published in a newspaper of general circulation in the county of the project site. In this case the notices ran in the San Jose Mercury News (in English) on November 4, 2022, El Observador (in Spanish) on November 4-10, 2022, and the World Journal (in Chinese) on October 31,2022. Staff conducted further outreach to and consultation with regional tribal governments as described in **Section 4.5 Cultural and Tribal Cultural Resources**.

The CEC staff provided public notice of the Application for Small Power Plant Exemption on October 25, 2022, through a Notice of Receipt (NOR) via the docket and GovDelivery system. This notice was also mailed out on October 27, 2022, to property owners and occupants within 1,000 feet of the project site and 500 feet of project linears (e.g., sewer, natural gas, water, transmission line connections). The NOR directed recipients to the project webpage and included instructions on how to sign up for the GovDelivery system to receive electronic notification of events and the availability of documents related to the SPPE proceeding.

2.5.1.2 Notice of Preparation

On February 9, 2023, staff issued a Notification of Preparation (NOP) of an EIR to responsible and trustee agencies, starting a 30-day comment period. The NOP was issued via the project's docket, to the GovDelivery system for those signed up for the project's subscription list, the State Clearinghouse, and via email with delivery notification. The issuance of the NOP satisfied the agency notification requirement specified in section 15082 of the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) and also satisfied a request for agency consultation specified in Title 20, section 1714. The mailing list used to engage with stakeholder agencies can be found in **Appendix E**.

Staff reviewed and considered the comments received during the NOP comment period and addressed them as appropriate in the applicable technical section.

2.5.1.3 Draft Environmental Impact Report

The process for public notification of the Draft EIR is set forth in section 15087 of the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) and requires at least one of the following procedures:

(1) Publication at least one time in a newspaper of general circulation in the area affected by the proposed project.

(2) Posting of notice by the lead agency on and off site in the area where the project is to be located.

(3) Direct mailing to the owners and occupants of property contiguous to the parcel or parcels on which the project is located. Owners of such property shall be identified as shown on the latest equalized assessment roll.

To comply with section 15087, staff mailed notification of the Draft EIR to all owners and occupants contiguous to the project site and linears, the local public library, and to interested persons. In addition, notification was sent via the GovDelivery system. Public agencies received notification of the EIR by direct mail or through the State Clearinghouse. See **Appendix E** for the mailing list. The Draft EIR was also filed with the State Clearinghouse.

2.6 Organization of this EIR

This EIR is organized into five sections, as described below:

- Section 1 Summary. This section provides a concise overview of the proposed project and the necessary approvals; the potentially significant environmental impacts that would result from the proposed project; mitigation measures identified to reduce or eliminate these impacts; project alternatives; nature of comments received on the NOP; and areas of known controversy and issues to be resolved.
- Section 2 Introduction. This section describes the type, purpose, and function of the EIR; the environmental review process; and the organization of the EIR.
- Section 3 Project Description. This section summarizes the proposed project, including the location of the site and project boundaries, characteristics of the proposed project, and objectives sought by the proposed project.
- Section 4 Environmental Setting, Environmental Impacts and Mitigation. This section includes the environmental setting; regulatory background; approach to analysis; project-specific and cumulative impacts; and mitigation measures, when appropriate. Staff evaluates the potential environmental impacts that might reasonably be anticipated to result from construction and operation of the proposed project. Staff's analysis is broken down into the following environmental resource topics derived from CEQA Appendix G:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Energy and Energy Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Utilities and Service Systems
- Wildfire
- Mandatory Findings of Significance

In addition, CEC CEQA analysis documents include an analysis of how the project would potentially impact an Environmental Justice[1] population.

For each subject area, the analysis includes a description of the existing conditions and setting related to the subject area, an analysis of the proposed project's potential environmental impacts, and a discussion of mitigation measures, if necessary, to reduce potentially significant impacts to less than significant levels.

- Section 5 Alternatives. This section includes a discussion of a reasonable range of alternatives to the proposed project, or to the location of the project, which could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and an evaluation of the comparative merits of the alternatives. This section also includes an evaluation of the no project alternative.

1 An environmental justice population is based on race and ethnicity or low-income status. See Section 4.21 Environmental Justice for more information.

Section 3

Project Description

3 Project Description

GI Partners (applicant) is seeking a Small Power Plant Exemption (SPPE) from the California Energy Commission's (CEC) jurisdiction to proceed with local permitting rather than requiring certification by the CEC for the Bowers Backup Generating Facility (BBGF). The BBGF is planned as part of the Bowers Data Center (BDC), and together these constitute the "project" under the California Environmental Quality Act (CEQA). The project includes the data center building, a 72-megawatt (MW) emergency backup generating facility, a new electrical substation, switchgear and distribution cabling to interconnect the generators to their respective portion of the building, surface parking, landscaping, and utility pipeline connections.

The discretionary decision being considered by the CEC is whether the City of Santa Clara (City) may permit the project, including the small thermal power plant. This environmental analysis assesses the project to support the CEC's jurisdictional decision. If the CEC exempts the project from its jurisdiction, the City, as the permitting authority for the project, and therefore a responsible agency, would rely on the CEC's EIR for purposes of CEQA clearance during the entitlement processing.

3.1 Project Title

Bowers Backup Generating Facility

3.2 Lead Agency Name and Address

California Energy Commission
715 P Street, MS 40
Sacramento, California 95814

3.3 Lead Agency Contact Person and Phone Number

Ann Crisp, Senior Environmental Planner
Siting, Transmission and Environmental Protection Division
California Energy Commission
(916) 776-7975

3.4 Project Location

The project site is located at 2805 Bowers Avenue in Santa Clara, California with an Assessor's Parcel Number of 216-28-063. The project site is bound by an existing one-story office building to the north, a material testing laboratory and a one-story office building to the east, an existing Silicon Valley Power (SVP) substation (Uranium Substation) to the south, and Bowers Avenue to the west. **Figure 3-1** shows the regional location and **Figure 3-2** identifies the project vicinity.

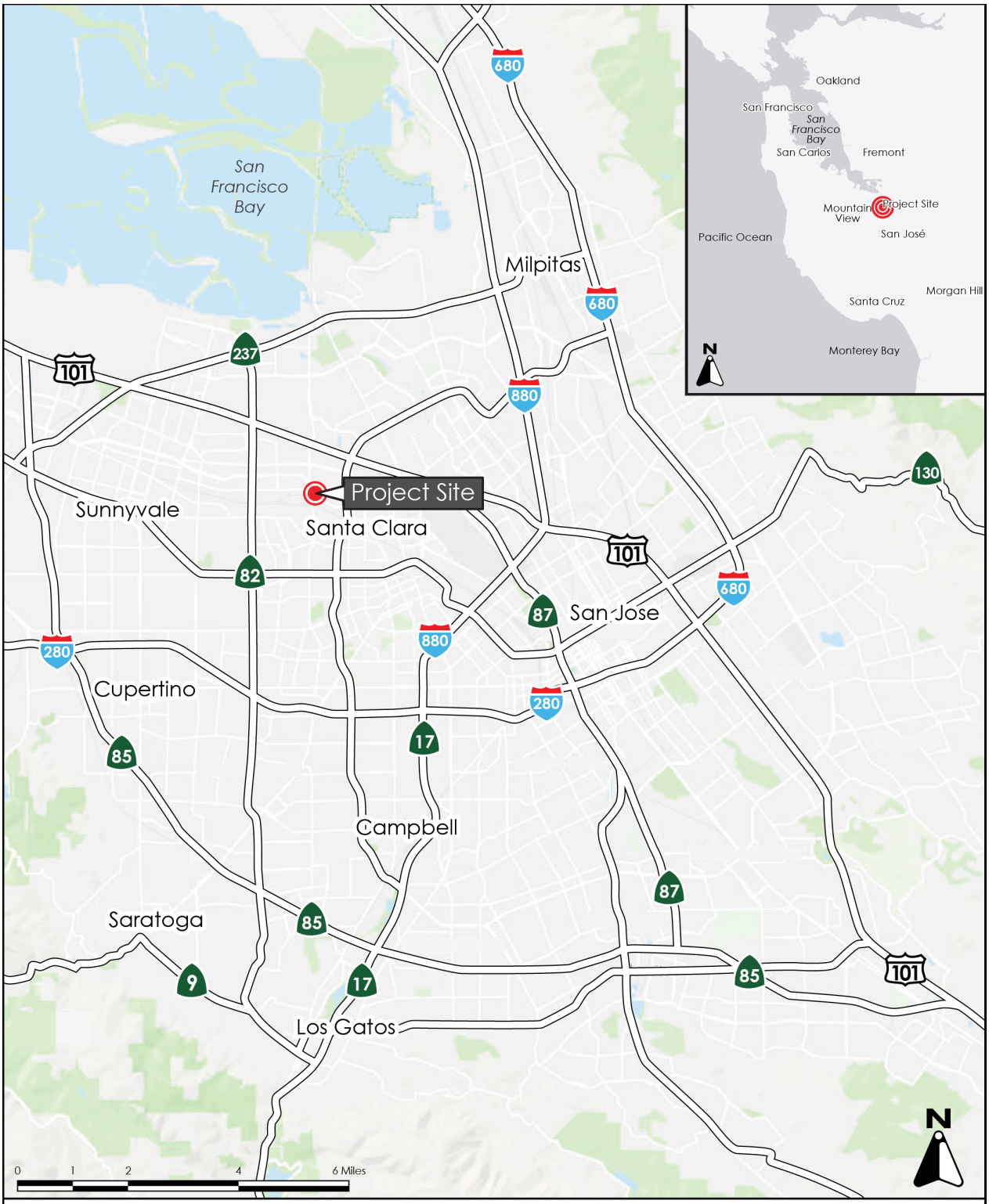

Figure 3-1
Regional Map

Source: GI Partners 2022a - Main Figure 2.1

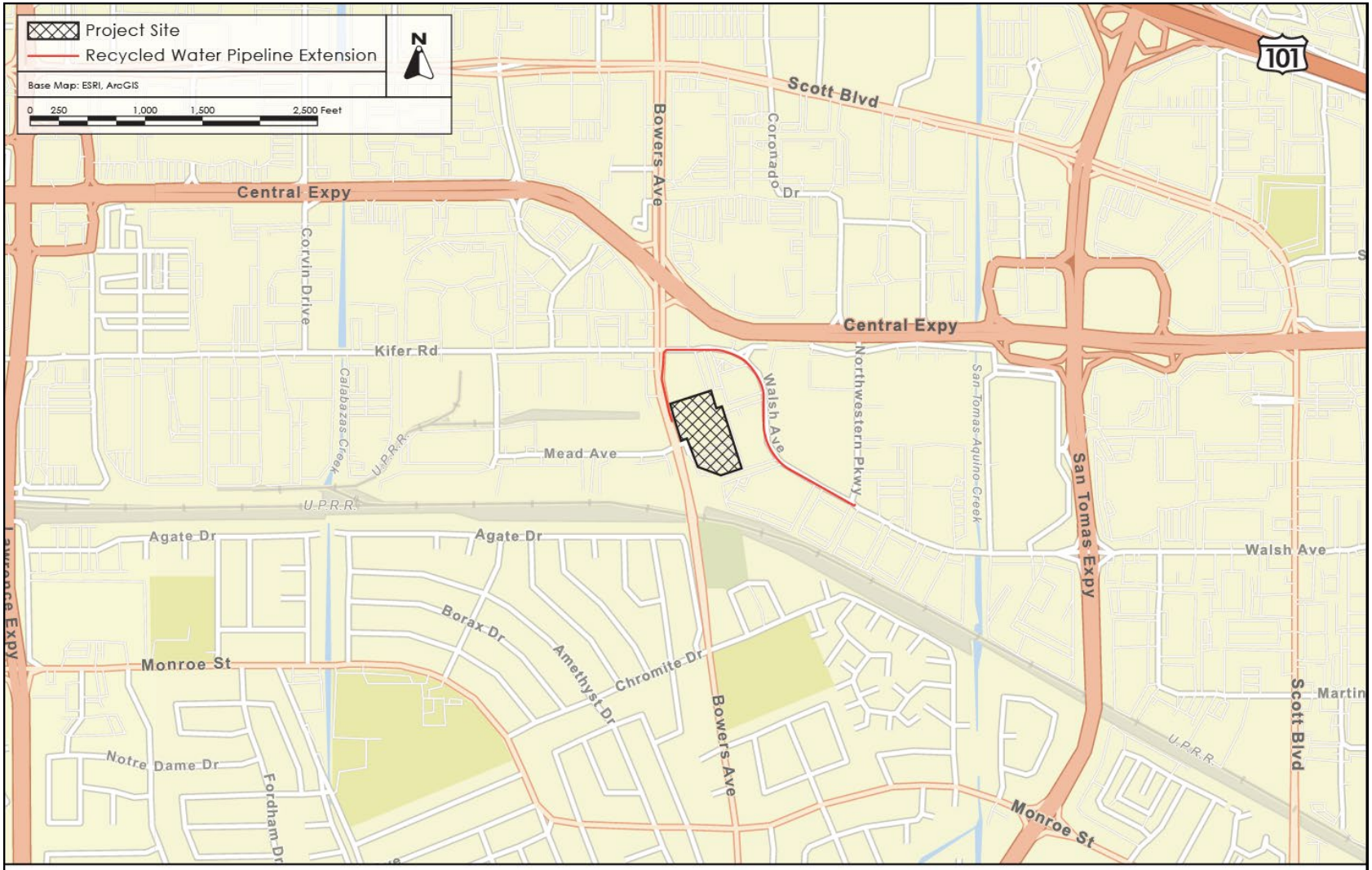

Figure 3-2
Project Location

Source: Gi Partners Supplemental Responses to Data Request Set 1 DR35 - BBGF Figure 2.2

3.5 Project Objectives

The applicant has identified the following project objectives:

- Develop a state-of-the-art data center large enough to meet projected growth.
- Develop the data center on land that has been zoned for data center use at a location acceptable to the City.
- Incorporate the most reliable and flexible form of backup electric generating technology into the BBGF 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 BBGF must provide a higher reliability than 99.999 percent in order for the BDC to achieve an overall reliability of equal to or greater than 99.999 percent reliability.
        - The BBGF must provide reliability to the 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 would have redundancy to continue to operate without interruption.
        - The selected backup electric generation technology must include engineering methods, procedures, and equipment that have been achieved in practice.
        - The BDC must have onsite 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 use systems that are compatible with one another and be maintainable in a reasonable fashion achieving timely switch outs, repairs, and maintenance. Warranty and support must be within practical means to achieve optimum uptime during failures within the utility power supply.

3.6 Land Use Zoning Conformance

The approximately 5.12-acre project site has a General Plan land use designation of High Intensity Office/Research and Development (R&D) and a zoning designation of Light Industrial. The General Plan land use designation of High Intensity Office/R&D does not allow stand-alone data centers serving off-site uses and is inconsistent with the site's zoning designation of Light Industrial. Due to the inconsistency between the site's General Plan land use designation and zoning designation, City of Santa Clara (City) staff

recommended that the project owner apply with the City for a General Plan amendment to change the project site's General Plan land use designation to Light Industrial, which allows stand-alone data centers and is consistent with the site's zoning designation of Light Industrial (GI Partners 2022e). The General Plan Amendment would take place after the CEC decision regarding the SPPE application (GI Partners 2022f). Please see **Section 4.11 Land Use** for more information.

The project site's zoning designation is Light Industrial, which is intended to provide an optimum general industrial environment, and accommodates industries operating substantially within an enclosed building (Santa Clara 2023, Section 18.48). The project's data center activities would take place in an enclosed building as required; however, the list of permitted uses does not include data centers (Santa Clara 2023, Section 18.48.030). Therefore, a data center could be allowed on the project site with the City's issuance of a conditional use permit.

3.7 Project Overview and General Description of the Project's Technical and Environmental Characteristics

Data Center

The BDC would include a four-story data center building encompassing approximately 244,068 square feet which would consist of three main components: the data halls, the administrative facilities, and a two-story exterior generator yard (GI Partners 2022e). The administrative section of the data center building would include the building lobby, security, restrooms, conference rooms, and landlord and customer office space. The shipping and receiving area and storage would be part of the administrative building with the loading docks behind the building footprints hidden from the main façade. The administrative building is proposed to be cladded with a curtain wall and metal panel system.

The data halls, which would include the client servers, would be cladded primarily with an external insulation and finish system. There would be 3 data halls per floor with a total of 12 halls. Each level would contain three data halls with its corresponding four electrical and uninterruptible power supply (UPS) rooms. There would also be medium voltage switch gear and fiber rooms associated with the data halls. The data center is being designed with an average rack power rating of 6 kilowatts (kW).

The façade of the east data hall would include a screen extending from 42 feet-6 inches above grade to shield the view of cable trays running up the façade. The top of the parapet at the administrative and data hall would be at 87.5 feet. There would be three exterior stairs located on the north, northeast, and southeast corners of the building that would be semi enclosed on two sides with a glass rain screen. There would be a rooftop dunnage platform provided at 92 feet for mechanical equipment. A sound attenuating screen topping off at 103.4 feet would fully enclose the platform. Access to the platform would be provided by a freight elevator near the center of the building. The mechanical

equipment screen on the roof the building is proposed to extend to a height of 103.33 feet in height from the top of the slab. A site plan is provided as **Figure 3-3**.

Uninterruptible Power Supply (UPS) System Description

The UPS system and batteries are part of the BDC and are not part of the BBGF. The UPS would protect the load against surges, sags, under voltage, and voltage fluctuation. The UPS would have built-in protection against permanent damage to itself and the connected load for all predictable types of malfunctions. The load would be automatically transferred to the bypass line without interruption in the event of an internal UPS malfunction.

Each battery bank in the UPS system would provide a minimum of 5 minutes of backup at 100 percent rated inverter load per 1000 kW module, at 77 degrees Fahrenheit (25 degrees Celsius), 1.67 end volts per cell, beginning of life.

Substation and Transmission Line

The project would construct a new 72 MVA electrical substation adjacent to the south side of the BDC and immediately adjacent and north of the existing SVP Uranium substation. The three-bay substation (three 30/40/50 MVA 60 kilovolt (kV)-12kV step-down transformers and primary distribution switchgear) would be designed to allow one of the two transformers to be taken out of service, effectively providing 72 MVA of total power (a 3-to-make-2 design) (GI Partners 2022e).

The substation would have an all-weather asphalt surface underlain by an aggregate base. A concrete masonry unit screen wall, 13 feet in height, would surround portions of the substation with the remainder of the substation protected with an 8-foot height chain link fence. An oil containment pit surrounding each transformer would capture unintended oil leaks. Access to the substation would be from Bowers Avenue.

The substation would be capable of delivering electricity to the BDC from SVP's new substation but would not allow any electricity generated from the BBGF to be delivered to the transmission grid. The availability of substation control systems would be ensured through a redundant direct current (DC) battery backup system.

The substation would be looped into the existing SVP Uranium Substation 60 kV transmission feeder. The loop would be configured with three radial taps to the BDC substation. Reliability would be maintained so that if there was a fault along any section of the loop, electric service would still be supplied from the receiving station at the other end of the 60 kV loop.

Figure 3-3
Aerial Photograph and Surrounding Land Uses

Source: Gi Partners Supplemental Responses to Data Request Set 1 DR35 - BBGF Figure 2.3

The new conductor that interconnects the new substation to the SVP system would be an aluminum conductor composite reinforced type, size 715 double bundle with a carrying capacity of 310 MVA. The general practice of SVP is to use tubular steel transmission poles for the two dead end structures. It is anticipated that up to three new transmission poles would be performed as tie-in with all three located on the project site (GI Partners 2022e).

To allow the BDC to begin operations as soon as possible, the project would include an interim power solution prior to full energizing of the new SVP substation. Interim power would initially be in the form of two 4.5 kilovolt ampere (kVA) underground circuits (with option of a third) encased in conduits within a concrete duct bank that would originate at the SVP Uranium Substation. These circuits would be intercepted near the property and brought into a new manhole to be located on the project site. The interim power lines would be installed using SVP typical conductors and construction methods.

Backup Generators

The 32 emergency backup generators would be located at the site in a generation yard adjacent to the east side of the BDC building. The generators would be installed in a stacked configuration with each stacked pair of generators supported by a 12,000-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 would be supported by a main urea tank installed below the lower generator. The generator packages and tanks would be enclosed in acoustical enclosures.

Generator System Description

Each of the 32 generators for the data center suites would be Cummins QSK95 standby emergency diesel fired generators equipped with selective catalytic reduction (SCR) equipment and diesel particulate filters to comply with Tier 4 emissions standards (GI Partners 2022e).

The maximum peak generating capacity of each generator is 3 megawatts (MW) for standby applications (short duration operation). Under normal operation when all four generators in a group capacity are active, the maximum load on each generator is designed to be 75 percent of the peak capacity.

Each individual generator would be provided with its own package system. Within that package, the prime mover and alternator would be automatically turned on and off by a utility-generator programmable logic controller transfer controller located in the 480-volt main switchboard located within the BDC. Each generator would be controlled by a separate, independent transfer controller. The generator would be turned on if the electrical utility power becomes unavailable and would 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 BDC.

The generator package would integrate a dedicated fuel tank urea tank within the generator enclosure. The generators would be constructed in a stacked configuration. with the lower generator placed on a concrete slab and the upper generator located on a structural steel platform. The generator enclosures would be approximately 10 feet wide, 30 feet long and 29 feet high. Each generator would have a stack height of approximately 33 feet. When placed on slab, they would be spaced approximately five feet apart horizontally.

The generator yard would be enclosed with 42 feet and 9 inches high perforated metal screen walls on the north, east, and south ends. The fence would include a sound attenuation blanket to ensure the noise from the generator testing and maintenance meets the City noise limits. Additionally, an 8-foot-high fence would be constructed around the perimeter of the property for security purposes. The mechanical penthouse would include a screen wall 14 feet and 11 inches tall not only to screen the equipment but would also include sound attenuation blanket to reduce the noise of the air chillers.

Generation Capacity and PUE

Based on the methodology recently adopted by the CEC's final decisions granting SPPEs for the last five data center backup generating facilities, the maximum generating capacity of the BBGF is determined by the maximum of capacity of the load being served.

The design demand of the BDC, which the BBGF has been designed to reliably supply with redundant components during an emergency, is based on the maximum critical information technology (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 BDC load on that worst-case day would be 72 MW.

The data center industry utilizes a factor called the Power Utilization Efficiency Factor (PUE) to estimate the efficiency of its data centers. The PUE is calculated by dividing the total demand of the data center infrastructure serving the critical IT spaces (including IT load) by the critical IT load itself. The theoretical peak PUE for the worst day calculation would be 1.50 (total 72 MW demand of building on worst case day divided by 48 MW total critical IT load). The average annual PUE would be 1.25 (total 60 MW demand of building average conditions divided by 48 MW design critical IT load). These PUE estimates are based on design assumptions and represent worst case.

As described above, the expected PUE is much lower because the critical IT that is leased by clients is rarely fully utilized. GI Partners' experience with operation of other data centers is that the actual annualized PUE would be closer to 1.25. For more information about PUE, see **Section 4.6 Energy**.

Fuel System

The backup generators would use renewable diesel, with ultra-low sulfur diesel (USLD or conventional) as backup fuel (GI Partners 2023d). Each of 16 stacked generator pairs

would have an approximately 12,000-gallon diesel fuel storage tank under the ground level generator and a 500-gallon day tank for the upper generator. Approximately 5,700 gallons for each generator are required for 24-hour operation. The generators would have a combined diesel fuel storage capacity of approximately 182,400 gallons, which is sufficient to provide more than 24 hours of emergency generation at full electrical worst-case demand of the BDC.

Cooling System

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

Utility Interconnections

As part of the construction of the new building utility interconnections for domestic water, recycled water, fire water, irrigation water, storm drain, sanitary sewer, and fiber would be made from the City infrastructure systems located along Bowers Avenue. There is a 12-inch diameter domestic potable water line operated by the City in Bowers Avenue along the frontage of the property. This domestic water line would serve as the primary source for potable water and fire supply to the project. There is also a recycled water pipeline located at the intersection of Walsh Avenue and Northwestern Parkway, approximately 2,600 feet to the southeast of the project site. The project would extend the recycled water line as a primary source of cooling and landscaping from the intersection of Walsh Avenue and Northwestern Parkway.

Stormwater

The San Francisco Bay Regional Water Quality Control Board has issued the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit to regulate stormwater discharges from municipalities and local agencies. Under Provision C.3 of the Municipal Regional Stormwater NPDES Permit, 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 project would construct stormwater treatment areas consisting of Low-Impact Development bioretention areas totaling approximately 6,300 square feet, sized according to the requirements of the Municipal Regional Stormwater NPDES Permit. The stormwater treatment areas would be located around the perimeter of the site, and adjacent to paved parking areas and drive aisles. The remainder of the required amount of stormwater treatment areas will be constructed once interim power is no longer needed

and the interim power facilities located on the southwest corner of the property are removed. Interim power is estimated to be removed in 2028. Downspouts for the roof drainage would discharge directly into bioretention areas located along the perimeter of the site. Bioretention areas would include perforated underdrains and overflow structures that connect to the on-site storm drains system which discharges to the public storm system along Bowers Avenue

The "C.3 Stormwater Handbook" published by the Santa Clara Valley Urban Runoff Pollution Prevention Program notes in Appendix E-2, HMP Applicability Map, that the project site is located in a "purple area", defined as "catchments draining to a hardened channel and/or tidal area" (SCVURPPP 2016) controls are not required for projects located in purple areas of the HMP Applicability Map. Therefore, the project would not incorporate hydromodification controls into the development of the proposed project.

Landscaping

The project proposes to remove 48 trees on site, primarily trees located in the existing parking lot, due to conflicts with various proposed civil and architectural improvements (GI Partners 2022e).

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

General Site Arrangement and Layout

The general site arrangement and layout of the project is presented in **Figure 3-4**.

Data Center

The data center building would be approximately 87.5 feet in height to the top of parapet. The mechanical equipment screen on the roof of the building would extend to a height of 103.33 feet in height from the top of the slab.

The BDC building would be located in the center of the site and would be set back at a minimum of 56.5 feet from the side yard to the north property line (2855 Bowers Avenue), a minimum of 108 feet from the side yard to the west (public way), a minimum of 162 feet from the side yard to the south (adjacent to a non-residential zone), and a minimum of 142 feet from the rear yard to the east (adjacent to a nonresidential zone).

Backup Generators

The 32 emergency backup generators would be located at the site in a generation yard adjacent to the east side of the BDC building.

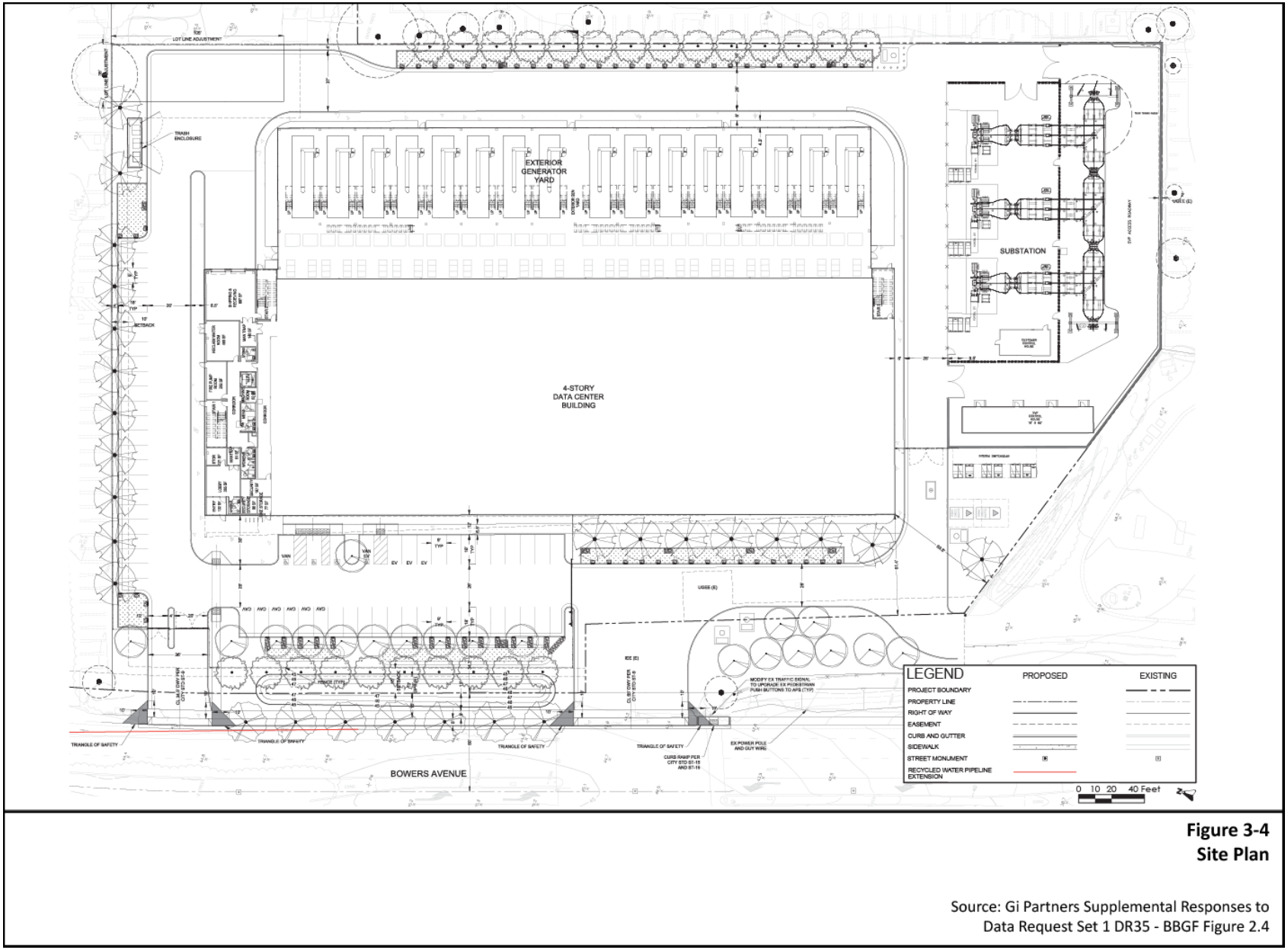

Figure 3-4
Site Plan

Source: Gi Partners Supplemental Responses to Data Request Set 1 DR35 - BBGF Figure 2.4

The generators would be installed in a stacked configuration with each stacked pair of generators supported by a 12,000-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 would be supported by a main urea tank installed below the lower generator. The generators packages and tanks would be enclosed in acoustical enclosures.

Site Access and Parking

The project site would include one primary entrance from Bowers Avenue on the western side of the property at the signalized intersection with Mead Avenue and one secondary entrance also from Bowers Avenue at the northwestern corner of the site. The site currently has two entrances from Bowers Avenue in the same general areas as the proposed entrances.

The project would provide a total of 62 parking spaces on site including 3 accessible (of which one is van accessible), 4 electric vehicle (of which 1 is electric vehicle van accessible), and 6 clean air vehicle parking spaces as shown on **Figure 3.4**.

3.8 Project Construction

The site is currently developed with a two-story building located at 2805 Bowers Avenue. The building would be demolished as part of this project.

Demolition and Construction Phasing

Demolition, grading, excavation and construction activities are anticipated to begin upon approval of the project, and estimated by staff to start in October 2023, and take approximately 24 months to complete. The construction workforce is estimated to have a peak number of workers of approximately 125 per month and an average of approximately 100 per month.

Site Grading and Excavation

Site grading is anticipated to include earthwork cuts of approximately 1 to 5 feet below the existing site grade and a total estimated soil export of 16,000 cubic yards. Grading of the site is not expected to require the import of fill material. Cuts of up to 16 feet deep may be needed for construction of the recycled water pipeline and utility interconnects (GI Partners 2022f, GI Partners 2023b).

Water Use

Grading and construction of the BDC including the BBGF is estimated to use 1.75-acre feet of water over the 24-month construction period.

Waste Management

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

3.9 Facility Operation

The backup generators would be run for short periods for testing and maintenance purposes and otherwise would not operate unless there was a disturbance or interruption of the utility supply. The Bay Area Air Quality Management District's (BAAQMD's) Authority to Construct and the California Air Resources Board's Airborne Toxic Control Measures limits each engine to no more than 50 hours annually for reliability purposes (i.e., testing and maintenance). See **Section 4.3 Air Quality** for more information.

Water Use

The BDC could require water when outside air temperatures approach design (89 degrees Fahrenheit) to augment its adiabatic cooling system using evaporative pads on the rooftop air-cooled chillers. The data center would be designed to use up to 0.5 acre-feet per year (AFY) of recycled water via the proposed recycled water pipeline extension, and a potable water connection would be provided as a back-up source to the recycled water system in the interim period. Total potable water use at full buildout of the BDC is estimated to be approximately 2 AFY. Landscaping for the site is estimated to use up to 1 AFY. Historical use at the site is approximately 3.2 AFY.The BBGF would not require any consumption of water during operation.

Hazardous Materials Management

The BBGF would prepare a Spill Prevention, Control and Countermeasure Plan to address the storage, use, and delivery of diesel fuel for the generators (GI Partners 2022e).

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

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

There would be no loading/unloading racks or containment for re-fueling events; however, a spill catch basin would be located at each fill port for the generators. To prevent a release from entering the storm drain system, storm drains would be

temporarily blocked off by the truck driver and/or facility staff during fueling events. Rubber pads or similar devices would 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 would be scheduled at times when storm events are improbable. Warning signs and/or wheel chocks would 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 would be utilized if a pump hose breaks while fueling the tanks. Tanker truck loading and unloading procedures would be posted at the loading and unloading areas.

Urea or diesel exhaust fluid would be used as part of the diesel engine combustion process to meet the emissions requirements. Diesel exhaust fluid would be stored in an approximately 400-gallon tank in the ground level generator enclosure for each pair of stacked generators. The tank can be filled in place from drums, totes, or a bulk tanker truck at the tank top or swapped out for new using quick connection fittings at the tank top.

Waste Management

Minor amounts of solid waste would be created by the project during maintenance activities.

Workforce

The total employment anticipated for the entire project after full site buildout is expected to be approximately 33 to 35 people working in the building on an average day (GI Partners 2023a).

3.10 Intended Use of the EIR

As the lead agency pursuant to the Warren-Alquist Act (Pub. Resources Code, § 25519), the CEC is responsible for the preparation of this EIR. The CEC will use this EIR in support of its discretionary decision to grant or deny the SPPE application. As noted, the CEC is not rendering any decision to approve or deny the construction of the project. If the exemption is granted, the EIR is expected to be used by the City in its consideration of permitting the project as well as by the BAAQMD for its issuance of various air quality permits. Upon exempting the project, the CEC would have no permitting authority over the project and would not be responsible for any mitigation or permit conditions imposed by the City or the BAAQMD.

In developing this EIR, CEC staff consulted with tribes requesting such engagement, with the City and the BAAQMD.

3.11 References

GI Partners 2022a – GI Partners (TN 245765). Bowers Backup Generating Facility Application for SPPE, Appendices B-E, Part 1, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

GI Partners 2022d – GI Partners (TN 245768). Bowers Backup Generating Facility Application for SPPE Appendices F and G, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

GI Partners 2022e – GI Partners (TN 245769). Bowers Backup Generating Facility Application for SPPE Main, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

GI Partners 2022f – GI Partners (TN 248070). GI Partners Response to CEC Data Request Set 1 – BBGF, dated December 14, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

GI Partners 2023b – GI Partners. (TN 249060). BBGF Supplemental Responses to Data Request - Set 1 - BBGF, dated March 7, 2023. Accessed on: March 20, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

SCVURPPP 2016 – Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). C.3 Stormwater Handbook. Appendix E-2. Prepared by EOA, Inc. Accessed on May 26, 2023. Available online at: https://scvurppp.org/2016/06/20/c-3-stormwater-handbook-june-2016/

Santa Clara 2023 – City of Santa Clara (Santa Clara). City of Santa Clara Zoning Code. Accessed January 2023. Available online at: https://www.codepublishing.com/CA/SantaClara/#!/SantaClara18/SantaClara1848.html#18.48

Section 4

Environmental Setting and Environmental Impacts

4 Environmental Setting, Environmental Impacts and Mitigation

Under the California Environmental Quality Act (CEQA), the environmental setting of a project is generally the physical environmental conditions in the vicinity of the project as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced (CEQA Guidelines, § 15125(a)(1)). The environmental setting described in an EIR by the lead agency will normally constitute the baseline physical conditions by which the lead agency determines whether an impact is significant (CEQA Guidelines, § 15125(a)).

4.1 Aesthetics

This section describes the environmental setting and regulatory background and discusses impacts pertaining to aesthetics associated with the construction and operation of the project in the existing landscape.[1]

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

Environmental checklist established by CEQA Guidelines, Appendix G.

4.1.1 Environmental Setting

The proposed project would be constructed on relatively flat land in a highly developed urban area within the city of Santa Clara, California. U.S. Highway 101 (Highway 101) is

1 Landscape is defined as, "The outdoor environment, natural or built, which can be directly perceived by a person visiting and using that environment. A scene is the subset of a landscape which is viewed from one location (vantage point) looking in one direction." (Hull and Revell 1989) "The term landscape clearly focuses upon the visual properties or characteristics of the environment, these include natural and man-made elements and physical and biological resources which could be identified visually; thus non-visual biological functions, cultural/historical values, wildlife and endangered species, wilderness value, opportunities for recreation activities and a large array of tastes, smells and feelings are not included." (Daniel and Vining 1983; Amir and Gidalizon 1990)

2 Public Resources Code section 21099 asks is the proposed project an "employment center project" on an "infill site" within a "transit priority area" as defined in this section. Public Resources Code section 21099(d)(1) states, "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment."

one mile north. San José Mineta International Airport (Airport) is a little more than one and three-quarter miles to the east. The Caltrain corridor is to the south.

The area between Highway 101, the Caltrain corridor, and the Airport consists of low intensity, heavy- and light-industrial uses that includes larger mid-rise buildings, manufacturing, construction-related industries, warehousing and distribution, data centers, and repair services with a combination of surface and structured parking and well-landscaped grounds. Medium-density residential uses are south of the Caltrain corridor.

The project site is approximately 5.12 acres. It has a two-story building (approximately 55,000 square feet) and improvements, trees and landscaping that are to be removed.

The project's major publicly visible buildings and structures would include a four-story data center building (approximately 244,068 square feet) and improvements, 32 diesel-fired backup generators (stacked configuration), and a substation. Refer to **Section 3 Project Description** for details regarding the project.

Regulatory Background

Federal

No federal regulations related to aesthetics apply to the project.

State

California Scenic Highway Program. The California Scenic Highway Program was established by the Legislature as Article 2.5 (commencing with section 260) of the Streets and Highways Code. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment.

Section 263 of the Streets and Highways Code, the "State Scenic Highway System List," provides a list of highways that have been either officially designated or are eligible for designation as a state scenic highway. Review of the list shows the project site is not along a designated state scenic highway.

Local

City of Santa Clara 2010-2035 General Plan. The City of Santa Clara 2010-2035 General Plan (General Plan) identifies the General Plan designations, and land use goals and policies of real property within the city of Santa Clara. The General Plan shows the project site land use designation High-Intensity Office/Research and Development (R&D).

"This classification is intended for high-rise or campus-like developments for corporate headquarters, R&D and supporting uses, with landscaped areas for employee activities. Permitted uses include offices and prototype R&D uses. Data centers under this designation are limited to those that serve the use on-site. Medical facilities, except pharmacies, are not allowed. In addition, manufacturing uses are limited to less than ten

percent of the building area. Accessory, or secondary, small-scale supporting retail uses that serve local employees and visitors are also permitted. Parking is typically structured or below-grade. The maximum FAR [floor area ratio] is 2.00, excluding any FAR devoted to supporting retail uses." (Santa Clara 2010, Chapter 5, section 5.2.2)

City planning staff recommended the applicant apply for a General Plan Amendment on the project site changing the current land use designation from High-Intensity Office/R&D to Light Industrial. Under the Light Industrial land use designation data centers serving off-site uses are an allowed use.

"This classification is intended to accommodate a range of light industrial uses, including general service, warehousing, storage, distribution and manufacturing. It includes flexible space, such as buildings that allow combinations of single and multiple users, warehouses, mini-storage, wholesale, bulk retail, gas stations, data centers, indoor auto-related uses and other uses that require large, warehouse-style buildings. Ancillary office uses, excluding medical facilities, are also permitted to a maximum of 20 percent of the building area. Retail associated with the primary use may be up to a maximum of ten percent of the building area. Because uses in this designation may be noxious or include hazardous materials, places of assembly, such as religious institutions and schools, and uses catering to sensitive receptors, such as children and the elderly, as well as entertainment uses such as clubs, theaters and sports venues south of U.S. Highway 101, are prohibited. Parking is typically surface level. The maximum FAR is 0.60." (Santa Clara 2010, Chapter 5, section 5.2.2)

Santa Clara City Code. The City of Santa Clara zoning map shows the project site within the Light Industrial (ML) zoning district.

"This district is intended to provide an optimum general industrial environment, and it is intended to accommodate industries operating substantially within an enclosed building. Such permitted uses shall not be objectionable or detrimental to adjacent properties because of signing, noise, smoke, odor, dust, noxious gases, vibrations, glare, heat, fire hazards, or industrial wastes emanating from the property." (Santa Clara 2022a, section 18.48.020)

Staff reviewed the following zoning requirements that have some relation to aesthetics specific to governing scenic quality in accordance with Public Resources Code section 21071 applicable to the project. Public Resources Code section 21071, zoning and other regulations are discussed under subsection "4.1.2 Environmental Impacts."

- The ML zoning maximum permitted building height is 70 feet. (Santa Clara 2022a, section 18.48.070)
- Open landscaped area. The following yards and areas shall be developed into and permanently maintained as open landscaped areas containing ground cover, trees, and shrubs. (Santa Clara 2022a, section 18.48.120)

(a) Required Front Yards and Street Side Yards. A landscaped berm or planning division-approved equivalent, not less than thirty (30) inches in height, shall be provided between the required street setback area and any open area used for parking, storage, and the like, except when the open area is necessary for driveways and walkways.

(b) A minimum area equal to at least 10 percent of the required parking area to be evenly distributed throughout the parking area and adjacent to buildings.

(c) An alternative proposal, equal to or exceeding the open landscaped area provisions provided herein, may be used subject to approval by the Director of Community Development in accordance with the provisions of Chapter 18.76 SCCC.

Additional Development Standards. (Santa Clara 2022a, section 18.48.140)

(c) Lighting. Lighting shall be directed away from residential areas and public streets.

(d) Trash Disposal. Each property shall provide adequate and accessible trash disposal areas. Said disposal shall be screened from public view by a masonry enclosure, with solid wood gates, at least six (6) feet in height.

(f) Outdoor Storage and Exposed Mechanical Equipment. Subject to the applicable development standards, outdoor storage and exposed mechanical equipment shall not exceed six (6) feet in height within the first six (6) feet immediately adjacent to the front or street side yard setback line or any interior side or rear lot line. Beyond this point, storage may extend to a maximum height of ten (10) feet. Height of mechanical equipment and any accompanying screening shall be subject to Director of Community Development approval.

4.1.2 Environmental Impacts

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

Neither CEQA nor the CEQA Guidelines provide a clear-cut definition of what constitutes a scenic vista. Lead agencies may look to local planning thresholds for guidance when defining the visual impact standard for the purpose of CEQA.[3] A general plan, specific plan, zoning code, or other planning document may provide guidance.

Construction and Operation

Less Than Significant Impact. The construction and operation of the project would not have a substantial adverse effect on a scenic vista.

The General Plan does not identify a distinct scenic vista or a specific related policy.

The California Energy Commission has used the following definition of "scenic vista" in a number of its decisions concerning thermal power plant projects: "a distant view of high

3 Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal. App. 4th 477.

pictorial quality perceived through and along a corridor or opening."[4] Staff reviewed aerial and street view imagery (Google Earth, Google Maps) and site photographs, and concluded the project would be located on a relatively unenclosed plain, the Santa Clara Valley floor, and not within a scenic vista as defined. Therefore, impacts from construction and operation would be less than significant.

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

Neither CEQA nor the CEQA Guidelines provide a clear-cut definition of what constitutes a scenic resource. A scenic resource as presented in the above question may be explained as a widely recognized natural or man-made feature tangible in the landscape (e.g., a scenic resource designated in an adopted federal, state, or local government document, plan, or regulation, a landmark, or a cultural resource [historic values however differ from aesthetic or scenic values]). Staff evaluated if the project would substantially damage—eliminate or obstruct—the public view[5] of a scenic resource.

Construction and Operation

Less Than Significant Impact. The construction and operation of the project would not substantially damage a scenic resource.

Review of the General Plan, and aerial and street view imagery, supports the conclusion there is no recognized scenic resource on the site or in the vicinity that would have a public view of the project. A three-mile[6] distance zone surrounding the project was used in the identification and evaluation of scenic resources. In this urban area there are existing aboveground buildings, structures, earthworks, equipment, trees, and vegetation, etc., that would block or limit the public view of the project. Therefore, impacts from construction and operation would be less than significant.

4 California Energy Commission Final Decision for GWF Tracy Combined Cycle Power Plant Project Docket Number 08-AFC-7, Visual Resources, pg. 321; California Energy Commission Decision for Mariposa Energy Project Docket Number 09-AFC-3, Visual Resources, pg. 5; California Energy Commission Decision for Blythe Solar Power Project Docket Number 09-AFC-6, Visual Resources, pg. 514; California Energy Commission Decision for Genesis Solar Energy Project Docket Number 09-AFC-8, Visual Resources, pg. 7-8; California Energy Commission Decision for Pio Pico Energy Center Docket Number 11-AFC-01, Visual Resources, pg. 8.5-4.

5 A public view can be defined as the visible area from a location where the public has a legal and physical right of access to real property (e.g., city sidewalk, public park, town square, state highway). CEQA Guidelines Appendix G Environmental Checklist Form, I. Aesthetics, c. states "Public views are those that are experienced from publicly accessible vantage point."

6 "Based on the curve of the Earth**:** Standing on a flat surface with your eyes about 5 feet off the ground, the farthest edge that you can see is about 3 miles away." (Health Line 2019)

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

Public Resources Code section 21071 defines an "urbanized area."[7] The city of Santa Clara is an incorporated city with a population greater than 100,000 which constitutes an urbanized area. Information from the U.S. Census Bureau shows the city of Santa Clara-population 127,151 (Census 2020). As a result, the project was reviewed for conformance with zoning and other regulations governing scenic quality.

Review of Public Resource Code section 21099 concluded the proposed project is not an employment center project located within a transit priority area.

Construction and Operation

Less Than Significant Impact. The construction and operation of the project would not conflict with applicable zoning and other regulations governing scenic quality.

The project site is in the ML zoning district. "This district is intended to provide an optimum general industrial environment, and it is intended to accommodate industries operating substantially within an enclosed building." (Santa Clara 2022a, section 18.48.020)

- The ML zoning has a maximum building height of 70 feet. (Santa Clara 2022a, section 18.48.070)

The project's major publicly visible building is the four-story data center. The height to the top of the parapet on the data hall would be 87.5 feet. The height to the top of the mechanical equipment screen on the roof would be 103.33 feet. (GI Partners 2022e) If the City approves the applicant's minor modification to the building height, the proposed data center height of 87.5 feet would be permitted on the site.

In accordance with the city code "the height limitations ... do not apply to spires, belfries, cupolas, antennas, water tanks, ventilators, chimneys, or other mechanical appurtenances usually required to be placed above the roof level and not intended for human occupancy or to be used for any commercial or advertising purposes." (Santa Clara 2022a, section 18.64.010)

7 An "urbanized area" includes "(a) An incorporated city that meets either of the following criteria: (1) Has a population of at least 100,000 persons. (2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons." (Public Resources Code section 21071)

A few purposes of a height limit include to preserve a scenic vista, protect the public view of a scenic resource (e.g., architectural structure, a landmark, natural feature), and to maintain the character of a site and surrounding area (e.g., residential or commercial area). As previously discussed, review of aerial, surface, and street imagery shows the project's buildings and structures are not within a scenic vista, would not block the public view of a scenic resource, and elevations submitted show the project's building and structure heights would be concordant with heights of buildings and structures on adjacent properties and in the surrounding area.

- Open landscaped area shall be developed into and permanently maintained as open landscaped areas containing ground cover, trees, and shrubs. (Santa Clara 2022a, section 18.48.120)

The applicant is showing landscaping on the project site. As shown on the conceptual site plan (Figure 2.4) and discussed in the application, trees, large and medium shrubs, groundcovers, and swales would be installed along the property boundaries, building perimeters, and landscape beds distributed throughout the parking facilities. (GI Partners 2022e) The project would be approximately 86 percent impervious cover and 14 percent pervious cover. (GI Partners 2022e)

- Lighting. Lighting shall be directed away from residential areas and public streets. (Santa Clara 2022a, section 18.48.140)

"[O]utdoor lighting would be angled downward and would include light visors and light hoods." (GI Partners 2022e) The closest residential area is more than 500 feet south of the site and on the opposite side of Bowers Avenue and the Caltrain corridor.

- Trash Disposal. Each property shall provide adequate and accessible trash disposal areas. The trash disposal is to be screened from public view by a masonry enclosure, with solid wood gates, at least six (6) feet in height. (Santa Clara 2022a, section 18.48.140)

As shown on the conceptual site plan (Figure 2.4), a three commercial dumpster trash enclosure would be sited along the project site's northwest property line (rear of the property) behind an 8-foot-high chain link fence. The fence is to be installed around the property perimeter for security purposes. The trash enclosure would be out of the public view.

- Outdoor Storage and Exposed Mechanical Equipment. Subject to the applicable development standards, outdoor storage and exposed mechanical equipment shall not exceed six (6) feet in height within the first six (6) feet immediately adjacent to the front or street side yard setback line or any interior side or rear lot line. Beyond this point, storage may extend to a maximum height of ten (10) feet. Height of mechanical equipment and any accompanying screening shall be subject to Director of Community Development approval. (Santa Clara 2022a, section 18.48.140)

As shown on the conceptual site plan (Figure 2.4), the 32 diesel-fired backup generators would be in an enclosed generator yard at the rear of the project site. Each stacked pair

of generators would be about 52 feet tall. (GI Partners 2022e, Figure 2.5) "The generator yard will be enclosed with 42'-9" feet high perforated metal screen walls on the north, east, and south ends." (GI Partners 2022e) The height of mechanical equipment and any accompanying screening is subject to the Director of Community Development approval. (Santa Clara 2022a, section 18.48.140)

The City has established an architectural review process to encourage the orderly and harmonious appearance of structures and property; maintain the public health, safety and welfare; maintain the property and improvement values throughout the city and encourage the physical development of the city as intended by the general plan. (Santa Clara 2022a, section 18.76.010) Architectural review is the responsibility of the City's Director of Community Development or designee. (Santa Clara 2022a, section 18.76.020)

For the reasons above, the project would be consistent with policies in the General Plan and conform with zoning listed in the Regulatory Background subsection.

The project would have 32 Cummins diesel engines to provide backup generation in case of an interruption in electrical supply from Silicon Valley Power. Manufacturer and performance data provided by the applicant shows the generator exhaust stack flow temperature at 100 percent load standby would be 912 degrees Fahrenheit for the Cummins QSK95.[8] This extremely high temperature (greater than 212 degrees Fahrenheit heating steam) would eliminate the necessary saturated moisture (vapor) rising from the generator exhaust stack that could condense in the atmosphere forming a publicly visible water vapor plume (visible plume). There is no water content in the generator's exhaust stack flow (dry air mass flow). The operation of the generators would not result in visible plumes. Therefore, impacts from construction and operation would be less than significant.

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

Light pollution is the "inappropriate or excessive use of artificial light...." (IDA 2021) Light pollution "occurs when outdoor lighting is misdirected, misplaced, unshielded, excessive or unnecessary. As a result, light spills unnecessarily upward and outward, causing glare, light trespass, and a nighttime urban 'sky glow' overhead, indicating wasted energy and obscuring the stars overhead." (DSS 2017)

The International Dark-Sky Association (IDA) is the authoritative voice on light pollution. IDA recognizes to minimize the harmful effects of light pollution, lighting should: only be on when needed; only light the area that needs it; be no brighter than necessary; minimize blue light emissions;[9] and be fully shielded.

"Reflectivity is defined as the property of a material to reflect the light or radiation. It is a measurement of reflectance irrespective of the thickness of a material." (Electrical4U

8 Appendix AQ-1 Emissions Calculations (GI Partners 2022c)

9 Studies show exposure to blue light can cause eye strain, fatigue, headaches, and sleeplessness.

2020) Materials and coatings that diffuse illumination or collection, reflectance and scattering are of utmost importance. A few examples of materials and surfaces that should be avoided if possible: any material with a reflectance greater than 35 percent; any shiny, highly reflective materials even for small surfaces; large smooth surfaces; and large expanses of glass. Material with a non-shiny, textured or matt/powder finish are preferable to flossy or shiny finishes. "An ideal coating is non-specular (to decrease geometrical effects) durable, high in reflectance and spectrally flat over a wide wavelength range to give a flat spectral response in input or output." (Labsphere 2020)

Construction and Operation

Less Than Significant Impact. The construction and operation of the project would not create a new source of substantial light, glare, or reflectivity adversely affecting day or nighttime views in the area.

- Lighting shall be directed away from residential areas and public streets. (Santa Clara 2022a, section 18.48.140c)

The project includes outdoor lighting for driveways, entrances, walkways, parking areas, and security purposes. The project site does not border a residential use. The nearest residential area is approximately 500 feet south of the project site on the opposite side of the Caltrain corridor. Outdoor lighting would be angled downward onsite and include light visors, light hoods, and utilize lighting controls to reduce energy usage. LED lighting fixtures would be installed throughout the project site.

"The exterior surfaces of the project would consist of precast concrete and metal screening and would not be significant sources of glare during daytime hours. The exterior surface on the northern administration sections of the building would consist primarily of glazed surfaces serving as the office windows." (GI Partners 2022e)

The construction laydown and staging areas may have nighttime lighting for security purposes. Outdoor construction-related lighting would be directed onsite and away from surrounding properties. Therefore, impacts from construction and operation would be less than significant.

4.1.3 Mitigation Measures

None required.

4.1.4 References

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Labsphere 2020 – Labsphere, Inc. (Labsphere). "Technical Guide: Reflectance Materials and Coatings." n.d. Accessed on: May 12, 2023. Available online at: https://www.systems-eng.co.jp/dcms_media/other/Guide_Reflectance_Materials_Coatings.pdf

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Santa Clara 2022a – City of Santa Clara (Santa Clara). Santa Clara City Code. February 23, 2021. Accessed on: May 12, 2023. Available online at: https://www.codepublishing.com/CA/SantaClara/#!/SantaClaraNT.html

4.2 Agriculture and Forestry Resources

This section describes, with respect to agriculture and forestry resources, the environmental setting, regulatory background, and impacts associated with construction and operation of the project.

AGRICULTURE AND FORESTRY RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. 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?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. 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))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. 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?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

4.2.1 Environmental Setting

The project site is developed with an office building and surface parking lot and located in an urban area in the city of Santa Clara. The project site is surrounded by commercial and industrial uses to the north, east, and west and residential uses to the south. There are no agricultural or forest lands near the project site.

Regulatory Background

Federal

No federal regulations relating to agriculture and forestry resources apply to the proposed project.

State

Farmland Mapping and Monitoring Program. The California Department of Conservation established the Farmland Mapping and Monitoring Program (FMMP) in 1982 to assess the location, quantity, and quality of agricultural lands and conversion of those lands to other uses. The FMMP identifies and maps agricultural lands as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The current (2018) Santa Clara County Important Farmland Map shows that the project site (including locations of associated linears) is classified as Urban and Built-Up Land, which is defined as land "occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel" (CDOC 2022). Thus, the FMMP does not classify the project site as farmland.

Williamson Act. The California Land Conservation Act of 1965, or Williamson Act, is the principal method for encouraging the preservation of agricultural lands in California (Gov. Code, § 51200 et seq.). It enables local governments to enter into contracts with private landowners who agree to maintain specified parcels of land in agricultural or related open space use in exchange for tax benefits. The project site is not under a Williamson Act contract, according to the Santa Clara County Office of the Assessor (SCC 2022).

Local

City of Santa Clara 2010-2035 General Plan and Zoning Ordinance. The *City of Santa Clara 2010-2035 General Plan* (General Plan) shows that the project site is within an area designated as High Intensity Office/Research and Development on the General Plan land use map (Santa Clara 2010). The project site is in the Light Industrial (ML) zoning district (Santa Clara 2022).

4.2.2 Environmental Impacts

a. Would the project 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?

Construction and Operation

No impact. The FMMP classifies the site as Urban and Built-Up Land, which is not a farmland classification. Therefore, the project would not convert FMMP-designated farmland to a non-agricultural use, and no impact would occur.

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

Construction and Operation

No Impact. The project site is zoned Light Industrial (ML), which is not an agricultural zoning district. The project site is also not under a Williamson Act contract. The site is surrounded by urban uses, and no nearby land is zoned or used for agriculture. Therefore, the proposed project would not conflict with existing zoning for agricultural uses or a Williamson Act contract, and no impact would occur.

c. Would the project 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))?

Construction and Operation

No Impact. The project site is zoned Light Industrial (ML), which is intended for a variety of light industrial uses. Development in the area includes various urban uses, including industrial, commercial, and residential uses. No nearby land is used for or zoned as forest land, timberland, or timberland production; therefore, project construction and operation would cause no impacts related to the zoning of these lands.

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

Construction and Operation

No Impact. The project site does not contain forest land and is not in a region where forest land is present; therefore, project construction and operation would cause no loss of forest land, and no impact would occur.

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?

Construction and Operation

No Impact. The project is located in an urban area without nearby farmland or forest lands. The project would not induce growth near farmland or forest lands or disrupt the use of farmland or forest lands, ultimately causing conversion. Therefore, the project would cause no changes in the existing environment which would cause conversion of farmland to a non-agricultural use or conversion of forest land to a non-forest use. No impact would occur.

4.2.3 Mitigation Measures

None required.

4.2.4 References

CDOC 2022 – California Department of Conservation (CDOC). Farmland Mapping and Monitoring Program. Santa Clara County Important Farmland Data Availability; California Important Farmland Finder and Important Farmland Time Series. Accessed on December 30, 2022. Available online at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/SantaClara.aspx

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4.3 Air Quality

This section describes the environmental setting and regulatory background and discusses impacts specific to air quality associated with the demolition/construction, readiness testing and maintenance, and the potential for emergency operation of the Bower Data Center (BDC) and the associated Bower Backup Generating Facility (BBGF), known together as the "project".

Under the proposed project, the emergency backup generators, or gensets, would use renewable diesel as the primary fuel with ultra-low sulfur (conventional) diesel as the secondary backup fuel if renewable diesel is unavailable. However, the applicant estimated the emissions and air quality impacts based on the emission factors of conventional diesel. According to the currently available data (CARB 2021), the air quality and public health impacts using renewable diesel during project operations would likely be similar to those that would occur with the use of conventional diesel. Therefore, for the proposed project, staff expects that the impacts during project operations from the use of renewable diesel would be similar to those estimated based on the use of conventional diesel.

AIR QUALITY Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

4.3.1 Summary

In this analysis, the California Energy Commission (CEC) staff (staff) concludes that, with the implementation of mitigation measure **AQ-1** and oxides of nitrogen (NOx) emissions fully offset through the permitting process with Bay Area Air Quality Management District (BAAQMD), the project would not have a significant impact on air quality. Staff analyzes two primary types of air emissions: (1) criteria pollutants, which have health-based ambient air quality standards (AAQS); and (2) toxic air contaminants (TACs), which are identified as potentially harmful even at low levels and have no established safe levels or

health-based AAQS. Project construction would require approximately 24 months and is anticipated to begin in October 2023. Since the site preparation activities for the BDC would include the ground preparation and grading of the entire BDC site, the only construction activities for the BBGF would involve construction of the generation yard. This will include construction of concrete slabs, stacking structures, fencing, installation of underground and above ground conduit and electrical cabling to interconnect to the BDC building switchgear, and placement and securing of the generators. Staff analyzes the project's impacts on air quality during demolition/construction, routine operation, and the potential for emergency operation of the emergency backup generators (gensets). Staff also analyzes the potential cumulative effects of the project on air quality.

4.3.1.1 Significance Criteria

This air quality evaluation analyzes the degree to which the project would potentially cause a significant impact according to the California Environmental Quality Act (CEQA) guidelines. BAAQMD is the local air district responsible for the attainment and maintenance of the federal and state AAQS and associated program requirements at the project location. The analysis is based upon the methodologies and related thresholds of significance in BAAQMD's May 2017 CEQA Air Quality Guidelines (BAAQMD 2017b) to determine the significance of the potential air quality emissions and impacts. These methodologies include qualitative determinations and the quantification of whether project construction or operation would exceed numeric emissions and health risk thresholds (BAAQMD 2017b).

BAAQMD CEQA Guidelines project-level thresholds of significance ("BAAQMD significance thresholds") for criteria pollutants and precursor pollutants and the health risks of TACs that apply during construction and operation are shown in **Table 4.3-1**. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the Bay Area region's existing air quality conditions. Staff evaluated project emissions against the BAAQMD significance thresholds under CEQA environmental checklist criterion "b."

For fugitive dust emissions during construction periods, the BAAQMD CEQA Guidelines do not have a significance threshold. Rather, BAAQMD recommends using a current Best Management Practices (BMPs) approach, which has been a pragmatic and effective approach to the control of fugitive dust emissions.

Staff also evaluated the project's potential to expose sensitive receptors to substantial pollutant concentrations under CEQA environmental checklist criterion "c." Staff addressed both the ambient air quality impacts of criteria pollutants, which have health-based standards, and the impacts of TACs, which are identified as potentially harmful even at low levels and have no established safe levels or health-based ambient air quality standards.

The analysis includes ambient air quality impact modeling for demolition/construction and operation, which consists of readiness testing and maintenance, of the proposed

renewable diesel-fueled gensets to estimate the air quality impacts caused by the emissions. The AAQS, shown in **Table 4.3-2**, are health protective values, so staff uses these health-based regulatory standards to help define what is considered a substantial pollutant concentration for criteria pollutants.[1] Staff's analysis determines whether the project would be likely to exceed any AAQS or contribute substantially to an existing or projected air quality violation, and, if necessary, proposes mitigation to reduce or eliminate these pollutant exceedances or substantial contributions.

TABLE 4.3-1 BAAQMD THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction	Operation	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tpy)
ROG	54	54	10
NOx	54	54	10
PM10	82 (exhaust)	82	15
PM2.5	54 (exhaust)	54	10
PM10/ PM2.5 (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Risk and Hazards for New Sources and Receptors (Individual Project)	Same as Operation Threshold	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM2.5 increase: > 0.3 µg/m^3 annual average Zone of Influence: 1,000-foot radius from property line of source or receptor	
Risk and Hazards for New Sources and Receptors (Cumulative Threshold)	Same as Operation Threshold	Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) PM2.5: > 0.8 µg/m^3 annual average (from all local sources) Zone of Influence: 1,000-foot radius from property line of source or receptor	

Source: BAAQMD 2017b, Table 2-1

1 This approach provides a complete analysis that describes the foreseeable effects of the project in relation to all potential air quality related health impacts, including impacts of criteria pollutants to sensitive receptors; and therefore, addresses the California Supreme Court December 2018 *Sierra Club v. County of Fresno* opinion (https://www.courts.ca.gov/opinions/archive/S219783A.PDF).

Significance criteria also include Significant Impact Levels (SILs) for the particulate matter portions of the analysis. Regulatory agencies have traditionally applied SILs as a de minimis value, which represents the off-site concentration predicted to result from a source's emissions that does not warrant additional analysis or mitigation. If a source's modeled impacts at any off-site location do not exceed relevant SILs, the source owner would typically not need to assess multi-source or cumulative air quality modeling to determine whether or not that source's emissions would cause or contribute to a violation of the relevant National Ambient Air Quality Standard (NAAQS) or California Ambient Air Quality Standard (CAAQS). In the project's vicinity, based on data from the local San Jose-Jackson Street air quality monitoring station about 4.8 miles east-southeast of the project site, shown in **Table 4.3-4**, the background levels of particulate matter of 10 micrometers or less in diameter (PM10) and particulate matter of 2.5 micrometers and smaller in diameter (PM2.5) already exceed the 24-hour and annual AAQS even before accounting for the project's emissions. Staff compares the project's contribution to local criteria pollutant concentrations to SILs to determine whether the project's emissions would contribute significantly to those exceedances.

BAAQMD does not have a significance criterion in terms of PM10 concentrations or 24-hour concentrations of PM2.5. To determine if the project could contribute substantially to the existing PM10 exceedances, this analysis relies on the United States Environmental Protection Agency (U.S. EPA) PM10 SILs established in federal regulations for non-attainment areas (40 C.F.R., § 51.165(b)(2)) for 24-hour impacts (5 micrograms per cubic meter [$\mu g/m^3$]) and for annual impacts (1 $\mu g/m^3$). The same federal regulation (40 C.F.R. § 51.165(b)(2)) also established the U.S. EPA PM2.5 SILs concentrations for 24-hour impacts (1.2 $\mu g/m^3$) and for annual impacts (0.3 $\mu g/m^3$).

The BAAQMD significance threshold for a project-level increase in annual PM2.5 concentrations is also 0.3 $\mu g/m^3$, as shown in **Table 4.3-1**. However, in April 2018, the U.S. EPA issued *Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program* (U.S. EPA 2018a), which recommends PM2.5 SILs levels for 24-hour impacts to be 1.2 $\mu g/m^3$ (as in [40 C.F.R. § 51.165(b)(2)]) and for annual impacts to be 0.2 $\mu g/m^3$ (lower than 0.3 $\mu g/m^3$). Note that the U.S. EPA SILs values are all based on the forms of the applicable NAAQS. For example, the 24-hour PM2.5 SILs of 1.2 $\mu g/m^3$ is based on the 98^{th} percentile 24-hour concentrations averaged over three years. The annual PM2.5 SILs of 0.2 $\mu g/m^3$ is based on a three-year average of annual average concentrations. For this analysis, staff uses the U.S. EPA SILs as well as the BAAQMD CEQA Guidelines significance threshold to determine project impact significance of PM2.5 concentrations.

There are two kinds of thresholds for TACs: cancer risk and non-cancer risk. Cancer risk is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. Acute and chronic exposure to non-carcinogens is expressed as a hazard index (HI), which is the ratio of expected exposure levels to acceptable reference exposure levels (REL) for each of the TACs with acute and chronic health effects. The

significance thresholds for TACs and PM2.5 are listed in **Table 4.3-1** and summarized in the following text (BAAQMD 2017b).

The CEQA Guidelines require that the lead agency consider "whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable," (CEQA Guidelines § 15064(h)(1)). Two sets of thresholds are used by staff in the assessment of: (1) whether the effects of the project are cumulatively considerable; and (2) the significance of the cumulative impact for public health.

The BAAQMD recommends that operational-related TAC and PM2.5 emissions generated by a single source would be a significant impact and a cumulatively considerable contribution to local community risk and hazard impacts if emissions would cause impacts or cancer risks that would exceed the following thresholds (BAAQMD 2017b, pp.5-3 and 5-4):

- An excess lifetime cancer risk level of more than 10 in one million.
- A non-cancer chronic HI greater than 1.0.
- A non-cancer acute HI greater than 1.0.
- An incremental increase in the annual average PM2.5 concentration of greater than 0.3 $\mu g/m^3$.

The BAAQMD CEQA Guidelines significance thresholds for cumulative impacts are also summarized below. Following the BAAQMD CEQA Guidelines (BAAQMD 2017b, p.5-16), the cumulative impact would be significant if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot distance from the fence line of a source and the contribution from the project, exceeds the following:

- An excess lifetime cancer risk level of more than 100 in one million.
- A non-cancer chronic HI greater than 10.0.
- An annual average PM2.5 concentration of greater than 0.8 $\mu g/m^3$.

Additionally, if a project would not exceed the BAAQMD significance thresholds discussed above, then a project would also be consistent with and not have any impact on BAAQMD's Bay Area 2017 Clean Air Plan. This plan provides a regional strategy to protect public health and the climate, and it defines an integrated, multipollutant control strategy to reduce emissions of particulate matter, TACs, ozone and key ozone precursors, and greenhouse gases (GHG). The environmental checklist criterion "a" in this air quality analysis addresses the consistency of the project with BAAQMD's Bay Area 2017 Clean Air Plan.

4.3.1.2 Criteria Pollutants (including Fugitive Dust)

Construction

Under CEQA environmental checklist criterion "b," staff explains that construction-phase emissions are a result of construction equipment, material movement, paving activities, and on-site and off-site vehicle trips, such as material haul trucks, worker commutes, and delivery vehicles. Demolition, grading, excavation and construction activities are anticipated to begin in October 2023 and take approximately 24 months to complete. The construction workforce is estimated to have a peak number of workers of approximately 125 per month and an average of approximately 100 per month.

As shown in **Table 4.3-5**, the project's average daily criteria pollutant emissions during construction would be lower than the relevant numeric BAAQMD significance thresholds. There is no numerical threshold for fugitive dust generated during construction. The BAAQMD CEQA Guidelines recommend the control of fugitive dust through BMPs to conclude that impacts from fugitive dust emissions are less than significant (BAAQMD 2017b). With the implementation of mitigation measure **AQ-1**, the fugitive dust impacts from construction would be less than significant.

Under CEQA environmental checklist criterion "c," staff also analyzes the localized impacts of construction criteria pollutant emissions by comparing them with the AAQS. As shown in **Table 4.3-7**, staff finds that construction emissions would not contribute to any exceedance of the AAQS, except to the preexisting regional exceedances of PM10 and PM2.5. For PM10 and PM2.5, the project's contributions to the concentrations of PM10 and PM2.5 at sensitive receptor locations would be below the relevant SILs. Therefore, the project would not expose sensitive receptors to substantial criteria pollutant concentrations during construction. Construction is considered short-term, and construction impacts would be further reduced with the implementation of mitigation measure **AQ-1**.

With the implementation of mitigation measure **AQ-1**, criteria pollutant and fugitive dust emissions from project construction would not exceed any BAAQMD CEQA Guidelines significance threshold, cause a cumulatively considerable net increase of any criteria pollutant, conflict with or obstruct any applicable regional or local air quality plan, or expose sensitive receptors to substantial criteria pollutant concentrations, and would, thus, be less than significant.

Operation

Staff evaluated criteria pollutant emissions from operation and maintenance in two sections: (A) "routine operation" emissions including, among other things, emissions from readiness testing and maintenance of the 32 gensets; and (B) "emergency operation" emissions from using the gensets to support the electricity demand of the project.

(A) Routine Operation

Under CEQA environmental checklist criterion "b," staff concludes that criteria pollutant emissions from the project's routine operation would be less than significant with NOx emissions fully offset through the permitting process with BAAQMD. Routine operation of the project would generate criteria pollutant emissions from readiness testing and maintenance of the 32 gensets, off-site vehicle trips for worker commutes and material deliveries, and facility upkeep, such as architectural coatings, consumer product use, landscaping, water use, waste generation, and electricity use.

As shown in **Table 4.3-6**, staff finds that with NOx emissions fully offset through the BAAQMD permitting process, the project's total net annual and average daily emissions would not exceed any of the BAAQMD significance thresholds.

The project would also emit ammonia from the urea used in the selective catalytic reduction (SCR) system. There is no BAAQMD threshold for ammonia, which is not a criteria pollutant but instead a precursor to particulate matter. Because the project's primary emissions of particulate matter are well below the BAAQMD CEQA Guidelines significance thresholds, secondary particulate matter impacts from the project's ammonia emissions of 0.29 tons per year (tpy) would be less than significant and not require additional mitigation or offsets.

Under CEQA environmental checklist criterion "c," staff also analyzes the localized impacts of the project's criteria pollutant emissions during readiness testing and maintenance of the gensets by comparing them with the AAQS. As shown in **Table 4.3-8**, staff finds that the project's routine operation emissions would not contribute to any exceedance of any AAQS, except to the preexisting regional exceedances of PM10 and PM2.5. However, staff finds that the project's contributions to concentrations of PM10 and PM2.5 would be below the relevant SILs, and, therefore, would not expose sensitive receptors to substantial criteria pollutant concentrations.

Staff concludes that, with NOx emissions fully offset through the BAAQMD permitting process, criteria pollutant emissions from routine operation of the project would not exceed any BAAQMD CEQA Guidelines significance threshold, cause a cumulatively considerable net increase of any criteria pollutant, conflict with or obstruct any applicable regional or local air quality plan. Additionally, the project would not expose sensitive receptors to substantial criteria pollutant concentrations and thus impacts would be less than significant.

(B) Emergency Operation

(1) The emergency use of the gensets could occur in the event of a power outage or other disruption, upset, or instability that triggers a need for the project to use emergency backup power. Such emergency operations would be infrequent and for unplanned circumstances, which are beyond the control of the project owner. Emergency operations and the impacts of air pollutants during emergencies are generally exempt from air district offsetting and modeling requirements. Emissions

from emergency operations are not regular, expected, or easily quantifiable such that they cannot be modeled or predicted with certainty. Criteria Pollutant Emissions from Emergency Operation

As discussed under CEQA environmental checklist criterion "b," the BAAQMD 2019 policy, *Calculating Potential to Emit for Emergency Backup Power Generators*, requires a facility's potential to emit (PTE) to be calculated based on emissions proportional to emergency operation for 100 hours per year per genset, in addition to the permitted limits for readiness testing and maintenance (BAAQMD 2019). However, after comparing the PTE calculated to determine the account eligibility threshold, the applicant would only be required to offset permitted emissions from readiness testing and maintenance and not the emissions from emergency operation. BAAQMD requires the use of offsets to counterbalance increases in regular and predictable emissions, not increases in emissions occurring infrequently when emergency conditions arise.

In addition, emissions during routine operation are conservatively estimated with the assumption of 50 hours of readiness testing and maintenance per year per engine. However, other data center project applicants previously have stated that routine testing and maintenance would rarely exceed 12 hours per year. Based on the evidence about the likelihood and duration of emergency operation, the allowance of 50 hours per engine per year likely accommodates the average annual emergency operation emissions. Thus, staff concludes that the project would be unlikely to cause a cumulatively considerable net increase of any criteria pollutant.

(2) Criteria Pollutant Impacts from Emergency Operation

As discussed in detail under the subsection, "Emergency Operations Impacts for Criteria Pollutants" under CEQA environmental checklist criterion "c," the air quality impacts of genset operation during emergencies are not quantified below because the impacts of emergency operations are typically not evaluated during facility permitting and local air districts do not normally conduct an air quality impact assessment of such impacts. Staff assessed the likelihood of emergency events but finds that assessing the air quality impacts of emergency operations would require a host of unvalidated, unverifiable, and speculative assumptions about when and under what circumstances such a hypothetical emergency would occur. Such a speculative analysis is not required under CEQA (CEQA Guidelines §§ 15064(d)(3) and 15145), and, most importantly, would not provide meaningful information by which to determine project impacts. If emergency operation becomes a more frequent occurrence and more data is gathered regarding when and how these facilities operate during emergency situations, this conclusion might change.

Staff reviewed the BAAQMD comments on the Notice of Preparation (NOP) for other data center projects, such as the CA3 Data Center project, regarding the use of diesel engines for "non-testing/non-maintenance" purposes (BAAQMD 2021) and confirmed that these types of events are infrequent, irregular, and unlikely and the resulting emissions are not easily predictable or quantifiable. See more detailed discussion under the subsection,

"Emergency Operations Impacts for Criteria Pollutants" under CEQA environmental checklist criterion "c."

Cumulative Impacts

Staff concludes that the project's criteria pollutant emissions would not be cumulatively significant. BAAQMD CEQA Guidelines state that if a project's daily average or annual emissions of operational-related criteria pollutants or precursors do not exceed any BAAQMD threshold of significance, as listed in **Table 4.3-1** above, the project would not result in a cumulatively significant impact. As explained above, staff finds that all the criteria pollutant emissions would be below the BAAQMD CEQA Guidelines thresholds of significance with the implementation of mitigation measure **AQ-1** and NOx emissions being fully offset through the BAAQMD permitting process.

In addition, under CEQA environmental checklist criterion "c," staff performed a cumulative impacts analysis for annual PM2.5 impacts as part of a cumulative HRA. Staff concludes that the project's contribution to the annual PM2.5 concentrations would not be cumulatively significant.

Thus, staff concludes that the project's criteria pollutant emissions from the routine operation of the project would not be cumulatively significant.

4.3.1.3 Toxic Air Contaminants (TACs)

Under CEQA environmental checklist criterion "c," staff analyzed the potential impacts of the project's TAC emissions separately for construction and routine operation. Staff also analyzed the cumulative effects of the project's TAC emissions together with the impacts of other sources within 1,000 feet. Staff concludes that the individual and cumulative impacts from the project's TAC emissions would be less than significant.

Staff finds the health risks at all sensitive receptor locations would be less than the BAAQMD CEQA Guidelines significance thresholds shown in **Table 4.3-1**. Staff concludes that the health risks from project construction and routine operation would not cause a cumulatively considerable contribution to local community risk and hazard impacts, and the construction impact would be further reduced with the implementation of **AQ-1**.

Staff finds that significant cumulative health risks would not occur at sensitive receptor locations, and the project's contribution is not cumulatively considerable because the project effects would be less than the BAAQMD CEQA Guidelines significance thresholds shown in **Table 4.3-1**. Staff concludes that the effect of cumulative TAC emissions would be less than significant.

4.3.1.4 Background on Air Quality Evaluation

Criteria Pollutant Evaluation

California Air Resources Board (CARB) and U.S. EPA have each established federal and state AAQS for criteria pollutants. While both NAAQS and CAAQS apply to every location

in California, typically the state standards are lower (i.e., more stringent) than federal standards. Air districts adopt rules and attainment and maintenance plans aimed at protecting public health and reducing emissions (Health and Saf. Code, §40001). Air districts incorporate these requirements into the State Implementation Plan (SIP), which CARB submits for approval to the U.S. EPA as the state's overall plan to come into attainment for federal NAAQS (Health and Saf. Code, §39602). Once a SIP is approved by the U.S. EPA and published in the Federal Register, the requirements in the SIP become federally enforceable. Consistency of the project with the applicable air quality management plan is evaluated here because CEQA environmental checklist criterion "a" requires substantial evidence to support staff's conclusions of whether the project will conflict with or obstruct implementation of the applicable air quality plan. (See p. 43-1, above.)

Generally, state law designates local air districts as having primary responsibility for the control of air pollution from all sources other than mobile sources while the control of vehicular air sources is the responsibility of CARB. (Health and Saf. Code, §39002). Additionally, CARB is charged with coordinating efforts to attain and maintain CAAQS and NAAQS (Health and Saf. Code, §39003). Areas that meet the AAQS, based upon air monitoring measurements made by either the local air district or CARB, are classified as "attainment areas," and areas that have monitoring data that exceed AAQS are classified as "nonattainment areas" (Health and Saf. Code, §39608). Additionally, any given area can be classified as "attainment" for some pollutants and "nonattainment" for others. Even for the same pollutant, an area can be in attainment for one averaging time and nonattainment for another.

Some forms of air pollution are primary air pollutants, which are gases and particles directly emitted from stationary and mobile sources. Other forms of air pollution are secondary air pollutants that result from complex interactions between primary pollutants, background atmospheric constituents, and other secondary pollutants. Some pollutants can be a combination of both primary and secondary formation, such as PM2.5.

Air monitoring stations, usually operated by local air districts or CARB, measure the ambient air to determine an area's attainment status for NAAQS and CAAQS. Depending on the pollutant, the time over which these pollutants are measured varies from 1-hour, to 3-hours, to 8-hours, to 24-hours and to annual averages. Most criteria pollutants have ambient standards with more than one averaging time. Pollutant concentrations are expressed in terms of mass of pollution per unit volume of air, typically using micrograms for the mass portion of the expression and cubic meters of air for the volume, or "micrograms per cubic meter of air, expressed as "$\mu g/m^3$". The concentration can also be expressed as parts of pollution per million parts of air or "ppm". AAQS appear in Section 4.3.2 of this analysis.

Some forms of air pollution are primary air pollutants, which are gases and particles directly emitted from stationary and mobile sources. Other forms of air pollution are secondary air pollutants that result from complex interactions between primary pollutants, background atmospheric constituents, and other secondary pollutants. Some pollutants

can be a combination of both primary and secondary formation, such as PM2.5. In this case, the primary pollutant component of PM2.5 is directly emitted from the stack of diesel-fueled engines and the secondary pollutant component of PM2.5 is formed in the air by the transformation of gaseous NOx and sulfur oxides (SOx) into particles. The NOx and SOx emissions are precursors to the formation of the secondary aerosol pollutant. Emissions of NOx include nitric oxide (NO) and nitrogen dioxide (NO_2).

In the case of stack emissions from diesel-fueled engines, approximately 90 percent of the NOx is in the form of NO while the remainder is directly emitted NO_2. The ambient standards are expressly for NO_2, not NO. Once these gases exit the stack, chemical reactions in the region downwind of the facility, meteorological conditions, and sunlight interact to convert the NO into NO_2, ozone, and particulates. Most ozone in the ambient air is not directly emitted. Rather, it is formed in the air when the NO to NO_2 reaction occurs, followed by a set of complex reactions including interactions with volatile organic compounds (VOC). BAAQMD uses the term precursor organic compounds (POC) instead of VOC.

The local air district's New Source Review (NSR) program does the following: (1) defines the facility's potential-to-emit; (2) determines whether the sources would achieve minimum performance standards; (3) assesses whether the sources would achieve the Best Available Control Technology (BACT) requirements; and (4) determines whether the project would trigger offset requirements. These issues are addressed as part of CEQA environmental checklist criterion "b" in this air quality analysis.

Non-Criteria Pollutant Evaluation

Non-criteria pollutants that are typically evaluated are airborne toxic pollutants identified to have potential harmful human health impacts. Evaluations assess the potential risks from TACs and hazardous air pollutants (HAPs). TACs include toxic air pollutants identified by CARB, and HAPs include toxic air pollutants identified at the federal level. Most toxic air pollutants do not have AAQS; however, AAQS have been established for a few pollutants. Since TACs have no AAQS that specify health-based levels considered safe for everyone, an HRA is used to determine if people might be exposed to those types of pollutants at unhealthy levels.

The health risks from the project's TACs emissions are compared with the BAAQMD significance thresholds for a single source. If risks to the maximally exposed sensitive receptors are below significance thresholds, then impacts to other receptors would also be below significance thresholds. Cumulative health risk assessment (HRA) results are also compared with the BAAQMD significance thresholds for cumulative risk and hazards.

TACs are separated into "carcinogens" and "non-carcinogens" based on the nature of the physiological effects associated with exposure with exposure to the pollutant. Therefore, there are two types of thresholds for TACs: cancer risk and non-cancer risk. Cancer risk is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. Acute and chronic exposure to non-carcinogens is expressed as a

HI, which is the ratio of expected exposure levels to acceptable REL for each of the TACs associated with acute and chronic health effects.

The impact evaluation of toxic pollutants focuses on the project's incremental impact due to diesel particulate matter (DPM) exhaust from construction equipment and from the stacks of the diesel-fueled gensets. That is because DPM is the primary TAC of concern. This issue is addressed as part of CEQA environmental checklist criterion "c" in this air quality analysis.

Odor Impact Evaluation

Aside from criteria pollutants and TACs, impacts may arise from other emissions, notably related to odor. This issue is addressed as part of CEQA environmental checklist criterion "d" in this air quality analysis.

4.3.2 Environmental Setting

The proposed project would be located at 2805 Bowers Avenue in the city of Santa Clara. The property is irregularly shaped and is bound to the north by an existing one-story office building, to the east by a material testing laboratory and a one-story office building, to the South by an existing Silicon Valley Power (SVP) substation (Uranium Substation) and the west by Bowers Avenue. Refer to **Section 3 Project Description** for further details regarding the project.

Overall air quality in the SFBAAB is better than most other developed areas in California, including the South Coast, San Joaquin Valley, and Sacramento air basin regions. This is due to a more favorable climate with cooler temperatures and regional air flow patterns that transport pollutants emitted in the air basin out of the air basin. Although air quality improvements have occurred, violations and exceedances of the state ozone and PM standards continue to persist in the SFBAAB, and still pose challenges to CARB and local air districts (CARB 2013). The project area's proximity to both the Pacific Ocean and the San Francisco Bay has a moderating influence on the climate. This portion of the Santa Clara Valley is bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The surrounding terrain greatly influences winds in the valley, resulting in a prevailing wind that flows along the Santa Clara Valley's northwest-southeast axis.

Pollutants in the air can cause health problems, especially for children, the elderly, and people with heart or lung problems. Healthy adults may experience symptoms during periods of intense exercise. Pollutants can also cause damage to vegetation, animals, and property.

Criteria Pollutants

The U.S. EPA and the CARB have established AAQS for several pollutants based on their adverse health effects. The U.S. EPA has set NAAQS for ozone (O_3), carbon monoxide (CO), NO_2, PM10, PM2.5, sulfur dioxide (SO_2), and lead (Pb). Primary standards were set

to protect public health; secondary standards were set to protect public welfare against visibility impairment, damage to animals, crops, vegetation, and buildings. In addition, CARB has established CAAQS for these pollutants, as well as for sulfate (SO_4), visibility reducing particles, hydrogen sulfide (H_2S), and vinyl chloride. CAAQS are generally stricter than NAAQS. The standards currently in effect in California and relevant to the project are shown in **Table 4.3-2**.

TABLE 4.3-2 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards [a]	National Standards [b]	
			Primary	Secondary
O_3	1hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
PM10	24hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Mean	20 µg/m^3	—	
PM2.5	24hour	—	35 µg/m^3	Same as Primary Standard
	Annual Mean	12 µg/m^3	12 µg/m^3	15 µg/m^3
CO	1hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
NO_2	1hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3) [c]	—
	Annual Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
SO_2 [d]	1hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3hour	—	—	0.5 ppm (1,300 µg/m^3)
	24hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [d]	—
	Annual Mean	—	0.030 ppm (for certain areas) [d]	—

Notes: ppm=parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; "—" = no standard

[a] California standards for O3, CO (except 8-hour Lake Tahoe), SO2 (1 and 24 hour), NO2, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards (other than O3, PM, NO2 [see note c below], and those based on annual arithmetic mean) are not to be exceeded more than once a year. The 8-hour O3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. The 24-hour PM10 standard of 150 µg/m3 is not to be exceeded more than once per year on average over a 3-year period. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentile concentration is less than or equal to 35 µg/m3.

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

[d] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The previous SO_2 standards (24-hour and annual) will additionally remain in effect in certain areas: (1) any area for

which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is a U.S. EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.
Sources: BAAQMD 2023a, U.S. EPA 2023a

Attainment Status and Air Quality Plans

The proposed project would be in Santa Clara County in the San Francisco Bay Area Air Basin (SFBAAB), under the jurisdiction of BAAQMD. **Table 4.3-3** summarizes attainment status for the relevant criteria pollutants in the SFBAAB with both NAAQS and CAAQS.

TABLE 4.3-3 ATTAINMENT STATUS FOR SFBAAB

Pollutant	Averaging Time	State Designation	Federal Designation
O_3	1-hour	Nonattainment	—
	8-hour	Nonattainment	Nonattainment
PM10	24-hour	Nonattainment	Unclassified
	Annual	Nonattainment	—
PM2.5	24-hour	—	Nonattainment [a]
	Annual	Nonattainment	Unclassifiable/attainment [b]
CO	1-hour	Attainment	Attainment
	8-hour	Attainment	Attainment
NO_2	1-hour	Attainment	Unclassifiable/Attainment
	Annual	Attainment	Attainment
SO_2	1-hour	Attainment	Attainment/Unclassifiable [c]
	24-hour	Attainment	— [d]
	Annual	—	— [d]

Notes:
[a] On January 9, 2013, U.S. EPA issued a final rule to determine that the Bay Area attains the 24-hour PM2.5 national standard (U.S. EPA 2013). This U.S. EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this U.S. EPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour PM2.5 standard until such time as the BAAQMD submits a "redesignation request" and a "maintenance plan" to U.S. EPA, and U.S. EPA approves the proposed redesignation.
[b] In December 2012, U.S. EPA strengthened the annual PM2.5 NAAQS from 15.0 to 12.0 µg/m3. In December 2014, U.S. EPA issued final area designations for the 2012 primary annual PM2.5 NAAQS (U.S. EPA 2014). Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.
[c] On January 9, 2018, U.S. EPA issued a final rule to establish the initial air quality designations for certain areas in the U.S. for the 2010 SO2 primary NAAQS (U.S. EPA 2018b). This final rule designated the SFBAAB as attainment/unclassifiable for the 2010 SO2 primary NAAQS.
[d] See notes under **Table 4.3-2**.
Sources: CARB 2023a, BAAQMD 2023a, U.S. EPA 2013, U.S. EPA 2014, U.S. EPA 2018b

Overall air quality in the SFBAAB is better than most other developed areas in California, including the South Coast, San Joaquin Valley, and Sacramento air basin regions. This is due to a more favorable climate with cooler temperatures and regional air flow patterns that transport pollutants emitted in the air basin out of the air basin. Although air quality

improvements have occurred, violations and exceedances of the state ozone and PM standards continue to persist in the SFBAAB, and still pose challenges to CARB and local air districts (CARB 2013). The project area's proximity to both the Pacific Ocean and the San Francisco Bay has a moderating influence on the climate. This portion of the Santa Clara Valley is bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The surrounding terrain greatly influences winds in the valley, resulting in a prevailing wind that flows along the Santa Clara Valley's northwest-southeast axis.

Pollutants in the air can cause health problems, especially for children, the elderly, and people with heart or lung problems. Healthy adults may experience symptoms during periods of intense exercise. Pollutants can also cause damage to vegetation, animals, and property.

Existing Ambient Air Quality

The nearest background ambient air quality monitoring station to the project is the San Jose-Jackson Street station, which is about 4.8 miles east-southeast of the project site. **Table 4.3-4** presents the air quality monitoring data from the San Jose-Jackson Street monitoring station from 2017 to 2021, the most recent years for which data are available. Data in this table that are marked in **bold** indicate that the most-stringent current standard was exceeded during that period.

TABLE 4.3-4 AMBIENT AIR QUALITY MONITORING DATA

Pollutant	Averaging Time	2017	2018	2019	2020	2021
O_3 (ppm)	1-hour	**0.121**	0.078	**0.095**	**0.106**	**0.098**
	8-hour	**0.098**	0.061	**0.081**	**0.085**	**0.084**
PM10 (µg/m^3)	24-hour	**70**	**121.8**	**77.1**	**137.1**	45.1
	Annual	**21.3**	**23.1**	19.1	**24.8**	**20.1**
PM2.5 (µg/m^3)	24-hour (98th percentile)	34.3	**73.4**	20.6	**56.1**	23.3
	Annual	9.5	**12.9**	9.1	11.5	8.9
NO_2 (ppb)	1-hour (maximum)	67.5	86.1	59.8	51.9	47.8
	1-hour (98th percentile)	50	59	52	45	39.2
	Annual	12.24	12.04	10.63	9	8.73
CO (ppm)	1-hour	2.1	2.5	1.7	1.9	1.7
	8-hour	1.8	2.1	1.3	1.5	1.5
SO_2 (ppb)	1-hour (maximum)	3.6	6.9	14.5	2.9	1.8
	1-hour (99th percentile)	3	3	2	2	2
	24-hour	1.1	1.1	1.5	0.8	0.7

Notes: All data from San Jose-Jackson Street monitoring station.
Concentrations in **bold** type are those that exceed the limiting ambient air quality standard.
Sources: CARB 2023b, U.S. EPA 2023b

The maximum concentration values listed in **Table 4.3-4** have not been screened to remove values that are designated as exceptional events. Violations that are the result of exceptional events, such as wildfires, are normally excluded from consideration as AAQS violations. (U.S. EPA 2023b) Exceptional events undoubtedly affected many of the

maximum concentration values in recent years, especially between September to mid-November during wildfire activity. The ozone, PM10, and PM2.5 in 2017, 2018, and 2020 illustrate the effect of events like the extensive northern California wildland fires.[2] Even though fires tended to be far from the monitoring stations, the blanket of smoke and adverse air quality most likely affected air monitoring stations in the urban areas surrounding the project. For a conservative analysis, staff uses the background ambient air quality concentrations from 2019 to 2021 to represent the baseline condition at the project site.

Health Effects of Criteria Pollutants

Below are descriptions of the health effects of criteria pollutants that are a concern in the regional study area. Health and Safety Code, section 39606 requires CARB to adopt ambient air quality standards at levels that adequately protect the health of the public, including infants and children, with an adequate margin of safety. Ambient air quality standards define clean air (CARB 2023c).

Ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone 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 reactive organic gases (ROG) and NOx, including NO_2. ROG and NOx are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight.

Ozone can cause the muscles in the airways to constrict, trapping air in the alveoli, potentially leading to wheezing and shortness of breath. Ozone can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases, such as asthma, emphysema, and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease. Long-term exposure to ozone is linked to the aggravation of asthma and is likely to be one of many causes of asthma development. Long-term exposures to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children. The inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing, and worsening, a variety of symptoms and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath.

People most at risk for adverse health effects from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. Children are at greatest risk from exposure to ozone because their lungs

2 Wildfires also emit substantial amounts of volatile and semi-volatile organic materials and nitrogen oxides that form ozone and organic particulate matter (NOAA 2019).

are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engage in vigorous activities compared to adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures.

Particulate Matter. PM10 and PM2.5 represent size fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health. The health effects of particulate matter may include cardiovascular effects, such as cardiac arrhythmias and heart attacks, and respiratory effects, such as asthma attacks and bronchitis. Particulates can also reduce visibility.

Nitrogen Dioxide. Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods (as represented by the 1-hour standards) can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 (as represented by the annual standards) may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly, are generally at greater risk for the health effects of NO_2. NOx (includes NO_2 and NO) reacts with other chemicals in the air and sunlight to form both particulate matter and ozone.

Carbon Monoxide. CO is a pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in the reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO 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.

Sulfur Dioxide. SO_2 is produced through the combustion of sulfur or sulfur-containing fuels, such as coal. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (PM10 and PM2.5) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

Lead. Lead has a range of adverse neurotoxin health effects and previously was predominately released into the atmosphere primarily via the combustion of leaded

gasoline. The phase-out of leaded gasoline has resulted in decreasing levels of atmospheric lead.

Toxic Air Contaminants

Health and Safety Code, section 39655 defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." In addition, substances that have been listed as HAPs pursuant to 42 U.S.C. section 7412 are TACs under the state law pursuant to Health and Safety Code, section 39657 (b). CARB formally identified HAPs in California Code of Regulations, Title 17, section 93001 (OEHHA 2023).

TACs, also referred to as HAPs or air toxics, are different from criteria pollutants, such as ground-level ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. Criteria pollutants are regulated using NAAQS and CAAQS, as noted above. However, there are no ambient standards for most TACs[3], therefore, site-specific HRAs are conducted to evaluate whether risks of exposure to TACs create an adverse impact. Specific TACs have known acute, chronic, and cancer health impacts. CARB has identified TACs in the California Code of Regulations, Title 17, sections 93000 and 93001. The nearly 200 regulated TACs include asbestos, organic chemical compounds, and inorganic chemical compounds and compound categories, diesel exhaust, and certain metals. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act of 1987 (Health and Saf. Code, §44300 et seq.) apply to facilities that emit these listed TACs above regulated threshold quantities.

Health Effects of TACs

The health effects associated with TACs are quite diverse and generally are assessed locally rather than regionally. TACs could cause long-term health effects, such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term effects, such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches (BAAQMD 2017b, pg. 5-1). Numerous other health effects also have been linked to exposure to TACs, including heart disease, Sudden Infant Death Syndrome, respiratory infections in children, lung cancer, and breast cancer (OEHHA 2015).

The primary on-site TAC emission sources for the BBGF would be diesel engines, including engines in vehicles and equipment used during construction and stationary genset engines during readiness testing and maintenance. Diesel exhaust is a complex mixture of thousands of gases and fine particles and contains over 40 substances listed by the U.S. EPA as HAPs and by CARB as TACs. The solid material in diesel exhaust is known as DPM (CARB 2023d).

3 Ambient air quality standards for TACs exist for lead (federal and state standards), hydrogen sulfide (state standard), and vinyl chloride (state standard).

DPM has been the accepted surrogate for whole diesel exhaust since the late 1990s. CARB identified DPM as the surrogate compound for whole diesel exhaust in its Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant staff report in April 1998 (Appendix III, Part A, Exposure Assessment [CARB 1998]). DPM is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves particular attention mainly because of its ability to induce serious noncancerous effects and its status as a likely human carcinogen. Diesel exhaust is also characterized by CARB as "particulate matter from diesel-fueled engines". The impacts from human exposure would include both short and long-term health effects. Short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Effects from long-term exposure can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. Diesel exhaust is listed by the U.S. EPA as "likely to be carcinogenic to humans" (U.S. EPA 2002).

Sensitive Receptors

A valid CEQA analysis will take into consideration a project's impacts on health of people. People vary in their relative sensitivity to pollutants. Sensitive receptors are defined as groups of individuals that may be more susceptible to health risks due to chemical exposure. Sensitive individuals, such as infants, the aged, and people with specific illnesses or diseases, are the subpopulations that are more sensitive to the effects of toxic substance exposure. Examples of sensitive receptors include residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. Residences could include houses, apartments, and senior living complexes. Medical facilities could include hospitals, convalescent homes, and health clinics. Playgrounds could be play areas associated with parks or community centers (BAAQMD 2017b, pg. 5-8). The potential sensitive receptor locations evaluated in the HRA for the project include (GI Partners 2022e, pg. 79):

- Residential dwellings, including apartments, houses, and condominiums.
- Schools, colleges, and universities.
- Daycare centers.
- Hospitals and health clinics.
- Senior-care facilities.

Sensitive Receptors Near the Project

BAAQMD CEQA Guidelines recommends that any proposed project, including the siting of a new TAC emissions source, assess associated community risks and hazards impacts within 1,000 feet of the proposed project, and take into account both individual and nearby cumulative sources (that is, proposed project plus existing and foreseeable future projects). Cumulative sources represent the combined total risk values of each individual source within the 1,000-foot evaluation zone. A lead agency should enlarge the 1,000-

foot radius on a case-by-case basis if an unusually large source or sources of risk or hazard emissions that may affect a proposed project is beyond the recommended radius (BAAQMD 2017b, Table 2-1, pg. 5-2 and pg. 5-3).

Staff previously used a six-mile radius for cumulative impacts analyses of power plant projects that were substantially different than the proposed project. Based on staff's modeling experience, beyond six miles there is no statistically significant concentration overlap for nonreactive pollutant concentration between two stationary emission sources. The six-mile radius is more appropriate to be used for the turbines with tall stacks and more buoyant plumes. But the proposed diesel genset engines would result in more localized impacts due to shorter stacks and less buoyant plumes. The worst-case impacts of the diesel genset engines would occur at or near the fence line and decrease rapidly with distance from fence line. Therefore, staff believes that the BAAQMD CEQA Guidelines-recommended 1,000 feet is reasonable for the cumulative HRA of the project.

The proposed project site is approximately 5.12 acres (GI Partners 2022e, pg. 72). The applicant conducted a sensitive receptor search near the project site. The closest sensitive receptors to the project site are residences approximately 500 feet south, southwest and southeast of the project boundary (GI Partners 2022e, pg. 77-78). A list of the sensitive receptors, including residence, hospital, school, daycare, and college/university within or just beyond a 1,000-foot radius of the project site was presented in Table 3.3-16 (GI Partners 2022e, pg. 80) and Table AQ-52 (GI Partners 2022c). **Figure 4.3-1** shows the map of sensitive receptors near the project.

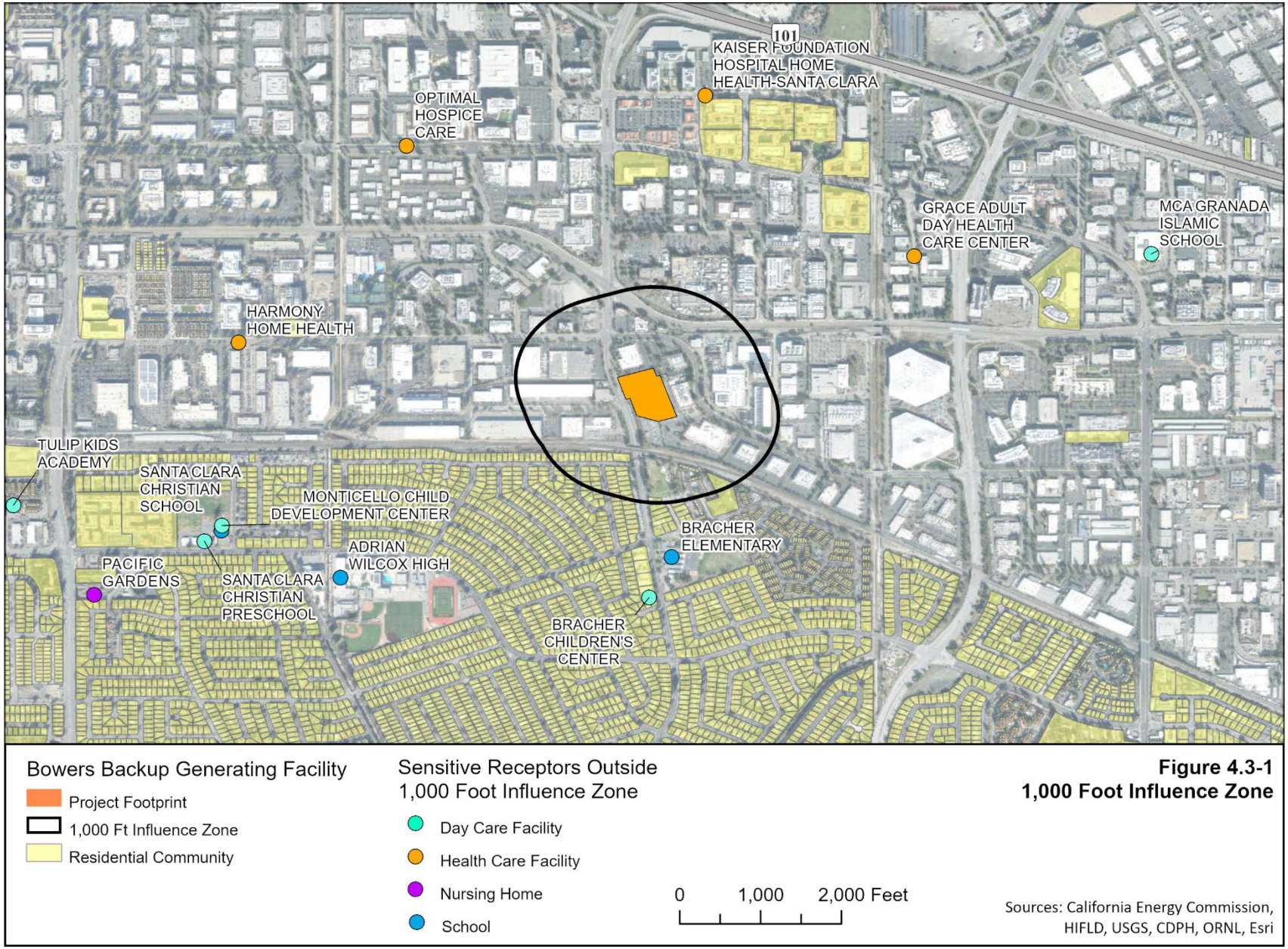

Figure 4.3-1
1,000 Foot Influence Zone

Regulatory Background

Federal, state, and regional agencies share responsibility for managing and regulating air quality in the SFBAA.

Federal

Federal Clean Air Act. The federal Clean Air Act (CAA) (42 U.S.C., § 7401 et seq.) establishes the statutory framework for regulation of air quality in the United States. Under the CAA, the U.S. EPA oversees the implementation of federal programs for permitting new and modified stationary sources, controlling TACs, and reducing emissions from motor vehicles and other mobile sources.

Title I (Air Pollution Prevention and Control) of CAA requires the establishment of NAAQS, air quality designations, and plan requirements for nonattainment areas. States are required to submit a SIP to the U.S. EPA for areas in nonattainment with NAAQS. The SIP must demonstrate how state and local regulatory agencies will institute rules, regulations, and other programs to attain NAAQS. Once approved by the U.S. EPA and published in the Federal Register, the local air district rules contained in the SIP are federally enforceable.

The Prevention of Significant Deterioration (PSD) program is a federal program for federal attainment areas. The purpose of the federal PSD program is to ensure that attainment areas remain in attainment of NAAQS based upon a proposed facility's annual PTE. If the annual emissions of a proposed project are less than prescribed amounts, a PSD review is not required. BDC is not expected to be subject to PSD, with a final determination made by BAAQMD at the time of permitting subsequent to the CEC determination.

New Source Performance Standard (NSPS) Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Clean Air Act section 111 (42 U.S.C., § 7411) authorizes the U.S. EPA to develop technology-based standards for specific categories of sources. Manufacturers of emergency stationary internal combustion engines (ICE) using diesel fuel must certify that new engines comply with these emission standards (40 C.F.R., § 60.4205). Under NSPS Subpart IIII, owners and operators of emergency engines must limit operation to a maximum of 100 hours per year for maintenance and testing, which allows for some use if necessary, to protect grid reliability; there is no time limit on the use of an emergency stationary ICE in emergency situations (40 C.F.R., § 60.4211(f)). The project's Tier 4 diesel-fired gensets would be subject to and must comply with the requirements in NSPS Subpart IIII.

National Emission Standards for Hazardous Air Pollutants. The CAA, section 112 (42 U.S.C., § 7412) addresses emissions of HAPs. The CAA defines HAPs as a variety of substances that pose serious health risks. Direct exposure to HAPs has been shown to cause cancer, reproductive effects or birth defects, damage to the brain and nervous system, and respiratory disorders. Categories of sources that cause HAP emissions are controlled through separate standards under CAA Section 112: National Emission

Standards for Hazardous Air Pollutants (NESHAP). These standards are specifically designed to reduce the potency, persistence, or potential bioaccumulation of HAPs. New sources that emit more than 10 tpy of any specified HAP or more than 25 tpy of any combination of HAPs are required to apply Maximum Achievable Control Technology.

Asbestos is a HAP regulated under the NESHAP. The asbestos NESHAP is intended to provide protection from the release of asbestos fibers during activities involving the handling of asbestos. CAA air toxics regulations specify work practices for asbestos to be followed during demolitions and renovations. The regulations require a thorough inspection of the area where the demolition or renovation would occur and advance notification of the appropriate delegated entity. Work practice standards that control asbestos emissions must be implemented, such as removing all asbestos-containing materials (ACM), adequately wetting all regulated ACM, and sealing ACM in leak-tight containers and disposing of the asbestos-containing waste material as expediently as practicable.

State

Generally, state law designates local air districts as having primary responsibility for the control of air pollution from all sources other than mobile sources while the control of vehicular air sources is the responsibility of CARB. (Health and Saf. Code, §39002) CARB is also responsible for the state's overall air quality management, including, among other things, establishing CAAQS for criteria pollutants identifying TACs of statewide concern and adopting measures to reduce the emissions of those TACs through airborne toxic control measures (ATCM), and regulating emissions of GHGs.

Air Toxic "Hot Spots" Information and Assessment Act of 1987. The Air Toxic "Hot Spots" Information and Assessment Act of 1987 (Assembly Bill 2588 (Connelly, Statutes of 1987), and codified as Health and Safety Code, § 44300 and the following), identifies TAC hot spots where emissions from specific stationary sources may expose individuals to an elevated risk of adverse health effects, particularly cancer or reproductive harm. Many TACs are also classified as HAPs. AB 2588 requires that a business or other establishment identified as a significant stationary source of toxic emissions provide the affected population with information about the health risks posed by their emissions.

Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines, Emergency Standby Diesel-Fueled Compression Ignition Engines. Statewide regulations govern the use of and emissions performance standards for emergency standby diesel-fueled engines, including those of the project. As defined in regulation (Cal. Code Regs., tit. 17, §93115.4(a)(29)), an emergency standby engine is, among other possible uses, one that provides electrical power during an emergency use and is not the source of primary power at the facility and is not operated to supply power to the electric grid. The corresponding ATCM (Cal. Code Regs., tit. 17, CCR § 93115.6) restricts each emergency standby engine to operate no more than 50 hours per year for

maintenance and testing purposes. The ATCM establishes no limit on engine operation for emergency use or for emission testing to show compliance with the ATCM's standards.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. CARB has adopted the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations to minimize the generation of asbestos from earth disturbance or construction activities (Cal. Code Regs., tit.17 § 93105). The Asbestos ATCM applies to any project that would include sites to be disturbed in a geographic ultramafic rock unit area or an area where naturally occurring asbestos, serpentine, or ultramafic rocks are determined to be present. Based upon review of the U.S. Geological Survey map detailing the natural occurrence of asbestos in California, naturally occurring asbestos is not expected to be present at the project site (Van Gosen and Clinkenbeard 2011).

Regional

Bay Area 2017 Clean Air Plan. The BAAQMD adopted the Bay Area 2017 Clean Air Plan on April 19, 2017 (BAAQMD 2017a). The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. The 2017 Clean Air Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan, pursuant to air quality planning requirements defined in state law. The 2017 Clean Air Plan defines an integrated, multi-pollutant control strategy to reduce emissions of particulate matter, TACs, ozone and key ozone precursors, and greenhouse gases.

BAAQMD California Environmental Quality Act Guidelines. The BAAQMD publishes CEQA Air Quality Guidelines to assist lead agencies in evaluating a project's potential impacts on air quality. The BAAQMD published the most recent version of its CEQA Air Quality Guidelines in May 2017 (BAAQMD 2017b).

BAAQMD Regulation 2, Rule 2: New Source Review (NSR). This rule applies to all new or modified sources requiring an Authority to Construct permit and/or Permit to Operate. The NSR process requires the applicant to use BACT to control emissions if the source will have the PTE a BAAQMD BACT pollutant in an amount of 10 or more pounds per day (lbs/day). The NSR process also establishes the requirements to offset emissions increases and to protect NAAQS.

To prevent sources from worsening regional nonattainment conditions, the NSR rule requires offsets at a 1:1 ratio if more than 10 tpy of NO_X or precursor organic compounds (POC), or more than 100 tpy of PM2.5, PM10, or SO_2, are emitted. If the PTE for NOx or POC is more than 10 tpy but less than 35 tpy, BAAQMD needs to provide any required offsets at 1:1 ratio from the Small Facility Banking Account in BAAQMD's Emissions Bank. If the PTE for NOx or POC is 35 tpy or more, the offset ratio increases to 1.15:1 and offsets can no longer be obtained through the Small Facility Banking Account.

On June 3, 2019, BAAQMD staff issued a new policy to protect the Small Facility Banking Account from over-withdrawal by new emergency backup generator sources. The policy

provides procedures, applicable to the determination of access to the Small Facility Banking Account only, for calculating a facility's PTE to determine eligibility for emission reduction credits (ERCs) from the Small Facility Banking Account for emergency backup generators (BAAQMD 2019). When determining the PTE for a facility with emergency backup generators, the PTE shall include as a proxy, emissions proportional to emergency operation for 100 hours per year per standby generator, in addition to the permitted limits for readiness testing and maintenance (generally 50 hours/year or less per standby or backup engine). BAAQMD would not allow an owner/operator to accept a permit condition to limit emergency operation to less than 100 hours per year to reduce the source's PTE for purposes of qualifying for the Small Facility Banking Account.

After comparing the PTE calculated to determine the account eligibility threshold, the amount of offsets required would be determined only upon the permitted emissions from readiness testing and maintenance and not the emissions from emergency operation. Emissions offsets represent ongoing emission reductions that continue every year, year after year, in perpetuity. BAAQMD requires the use of offsets to counterbalance increases in regular and predictable emissions, not increases in emissions occurring infrequently when emergency conditions arise. An owner/operator may reduce the hours of readiness testing and maintenance or install emissions controls to achieve a PTE of less than 35 tons per year (BAAQMD 2019).

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. Under this rule, a project would be denied an Authority to Construct permit if it exceeds any of the specified risk limits, which are consistent with BAAQMD's recommended significance thresholds. BACT would also be required for any new or modified source of TACs where the source has a cancer risk greater than 1.0 in 1 million or a chronic hazard index (HI) greater than 0.20. The specific toxicity values of each TAC for use in an HRA, as identified by California Office of Environmental Health Hazard Assessment (OEHHA), are listed in Table 2-5-1 of BAAQMD Rule 2-5.

BAAQMD Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines. This rule limits NOx and CO emissions from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower. This regulation (Rule 9-8-231) defines emergency use as "the use of an emergency standby or low usage engine during any of the following:"

- In the event of unforeseeable loss of regular natural gas supply;
- In the event of unforeseeable failure of regular electric power supply;
- Mitigation or prevention of an imminent flood;
- Mitigation of or prevention of an imminent overflow of sewage or waste water;
- Fire or prevention of an imminent fire;

- Failure or imminent failure of a primary motor or source of power, but only for such time as needed to repair or replace the primary motor or source of power; or
- Prevention of the imminent release of hazardous material.

Local

The City of Santa Clara (City) 2010-2035 General Plan (General Plan) includes goals and policies to reduce exposure of the city's sensitive population to the exposure of air pollution and TACs. The following goals, policies, and actions are applicable to the project:

Air Quality Goals

- 5.10.2-G1: Improved air quality in Santa Clara and the region.
- 5.10.2-G2: Reduced greenhouse gas (GHG) emissions that meet the State and regional goals and requirements to combat climate change.

Air Quality Policies

- 5.10.2-P1: Support alternative transportation modes and efficient parking mechanisms to improve air quality.
- 5.10.2-P2: Encourage development patterns that reduce vehicle miles traveled and air pollution.
- 5.10.2-P3: Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.
- 5.10.2-P4: Encourage measures to reduce GHG emissions to reach 30 percent below 1990 levels by 2020.
- 5.10.2-P5: Promote regional air pollution prevention plans for local industry and businesses.
- 5.10.2-P6: Require "Best Management Practices" for construction dust abatement.

4.3.3 Environmental Impacts

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

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

This section considers the project's consistency with the applicable air quality plan (AQP). This is a qualitative determination that considers the combined effects of project construction and operation.

Construction and Operations

Less Than Significant Impact. The applicable AQP is the Bay Area 2017 Clean Air Plan (BAAQMD 2017a).

A project would be consistent with the AQP if that project (BAAQMD 2017b, pg. 9-2 and 9-3):

1) Supports the primary goals of the AQP.

The determination for this criterion can be met through consistency with the BAAQMD significance thresholds. As can be seen in the discussions under environmental checklist criteria "b" and "c" of this air quality analysis, the project would have less than significant impacts related to the BAAQMD significance thresholds. Therefore, the project would have a less than significant impact related to the primary goals of the AQP.

2) Includes applicable control measures from the AQP.

The project would include the implementation of applicable control measures from the AQP. The project-level applicable control measures set forth in the Bay Area 2017 Clean Air Plan include: Decarbonize Electricity Generation (EN1), Green Buildings (BL1), and Bicycle and Pedestrian Access and Facilities (TR9). The project would comply with these control measures through compliance with the City's General Plan and the City's Climate Action Plan, as demonstrated in more detail in **Section 4.8 Greenhouse Gas Emissions**.

3) Does not disrupt or hinder implementation of any AQP control measures.

Examples of disrupting or hindering implementation of an AQP would be proposing excessive parking or precluding the extension of public transit or bike paths. The project design as proposed is not known to hinder the implementation of any AQP control measure.

For these reasons, the project would be consistent with the Bay Area 2017 Clean Air Plan and would have a less than significant impact related to implementation of the applicable AQP.

BAAQMD Regulation 2, Rule 2: New Source Review (NSR). As discussed on page 4.3-33, the NOx emissions of the gensets during readiness testing and maintenance would be fully offset through the permitting process with BAAQMD. Final details regarding the calculation of the facility's PTE and the ultimate NSR permitting requirements under BAAQMD's Regulation 2, Rule 2, would be determined through the permitting process with BAAQMD.

For emergency-use diesel engines with output over 1,000 brake horsepower, BAAQMD updated the definition of BACT in December 2020 to reflect the use of engines achieving Tier 4 exhaust standards (BAAQMD 2020); this requires that the required Tier 4-compliant engines that may include Tier 2 engines abated by catalyzed diesel particulate filter (DPF) and selective catalytic reduction (SCR). Each of the 32 diesel back-up emergency

generators proposed for this project would be equipped with SCR equipment and DPF to achieve compliance with Tier 4 emission standards. Staff expects the proposed generators would meet the current BAAQMD BACT requirements. However, BAAQMD would make the final determination of BACT during the permitting process.

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?

This section quantifies the project's nonattainment criteria pollutant emissions and other criteria pollutant emissions to determine whether the net emissions increase would exceed any of the BAAQMD emissions thresholds for criteria pollutants.

Construction

Less Than Significant with Mitigation Incorporated. Project construction emissions include onsite and offsite emissions. Onsite construction emissions from project construction would 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. Offsite construction emissions will be derived primarily from materials transport to and from the site, and worker travel. Emissions from the 24-month construction period were estimated using the California Emissions Estimator Model[4] (CalEEMod) program. The estimated criteria pollutant construction-phase emissions are summarized in **Table 4.3-5**.

The average daily emissions shown in **Table 4.3-5** indicate that construction emissions would be lower than the applicable BAAQMD significance thresholds for all criteria pollutants.

BAAQMD's numerical thresholds for PM10 and PM2.5 construction-phase emissions apply to exhaust emissions only. BAAQMD has no numerical threshold for fugitive dust generated during construction and instead recommends the control of fugitive dust through BMPs to conclude that impacts from fugitive dust emissions are less than significant (BAAQMD 2017b). The applicant proposed measures which include BAAQMD's recommended construction BMPs and exhaust emissions reduction measures (PD AQ-1.1). Staff generally concurs with the applicant's proposed measures and recommends mitigation measure **AQ-1**, which further incorporates the BAAQMD's comments to the Notice of Preparation for the proposed project and the mitigation measures from other CEC data center projects. Mitigation measure **AQ-1** would ensure that PM10 and PM2.5

4 CalEEMod was developed by the California Air Pollution Control Officers Association in collaboration with California Air Districts. This model is a construction and emissions estimating computer model that estimates direct criteria pollutant and direct and indirect greenhouse gas emissions for a variety of land use projects. The model calculates maximum daily and annual emissions. The model also identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures.

emissions are reduced to a level that would not result in a considerable increase of these pollutants. This impact would be reduced to less than significant.

TABLE 4.3-5 CRITERIA POLLUTANT EMISSIONS FROM PROJECT CONSTRUCTION

Pollutant	Average Daily Emissions (lbs/day) [a]	Maximum Construction Emissions (tons/period)	BAAQMD Significance Thresholds for Construction-related Average Daily Emissions (lbs/day) [c]	Threshold Exceeded ?
ROG/VOC	5.19	1.37	54	No
CO	9.51	2.51	None	N/A
NOx	5.91	1.56	54	No
SOx	0.021	0.0055	None	N/A
PM10 [b]	0.038 (exhaust) 1.0 (fugitive)	0.01 (exhaust) 0.263 (fugitive)	82	No
PM2.5 [b]	0.038 (exhaust) 0.36 (fugitive)	0.01 (exhaust) 0.096 (fugitive)	54	No

Notes:
[a] BAAQMD's thresholds are average daily thresholds for construction. Accordingly, the average daily emissions are the total estimated construction emissions averaged over total workdays.
[b] The average daily PM10 and PM2.5 exhaust emissions are compared to BAAQMD's significance thresholds for exhaust emissions. Fugitive emissions will be controlled with best management practices (BMPs), in accordance with the significance threshold.
[c] BAAQMD 2017b, Table 2-1.
Source: GI Partners 2022e, CEC staff analysis

Operation

Less Than Significant Impact. Operation emissions would result from diesel fuel combustion from the gensets, off-site vehicle trips for worker commutes and material deliveries, and facility upkeep, such as architectural coatings, consumer product use, landscaping, water use, waste generation, fuel storage and electricity use. Each of the primary emission sources are described in more detail below.

Stationary Sources – Generator Emissions. The project would include 32 gensets powered by 3-MW Cummins QSK95 engines. Each engine would be equipped with SCR and DPF to achieve compliance with Tier 4 emission standards.

All gensets would be operated for routine maintenance and readiness testing to ensure they would function during an emergency event. During routine readiness testing, criteria pollutants and TACs would be emitted directly from the gensets. Criteria pollutant emissions from generator testing were quantified using information provided by the manufacturer. In estimating the annual emissions, the applicant assumed that testing would occur for no more than 50 hours per year. The Airborne Toxic Control Measure for Stationary Compression Ignition Engines (Cal. Code Regs., tit.17, § 93115) limits testing to 50 hours per year per engine. However, it is the applicant's experience that each engine would be operated for considerably less than 50 hours a year. Maintenance and readiness testing usually occurs at loads ranging from 10 to 100 percent load. For

purposes of this application, emissions were assumed to occur at all load ranges. For NOx, it should be noted for maintenance and readiness testing, the first 15 minutes of each hourly test will be evaluated as uncontrolled using the Tier 2 emissions factors and assuming SCR is not fully operational. The remaining 45 minutes of each hourly test will be assumed to be fully controlled at Tier 4 compliance levels with SCR fully operational.

Emergency Operations. Emissions that could occur in the event of a power outage or other disruption, upset, or instability that triggers emergency operations would not occur on a regular or predictable basis. However, the BAAQMD 2019 policy, *Calculating Potential to Emit for Emergency Backup Power Generators*, requires a facility's PTE to be calculated based on emissions proportional to emergency operation for 100 hours per year per engine, in addition to the permitted limits for readiness testing and maintenance (BAAQMD 2019). However, after comparing the PTE calculated to determine the account eligibility threshold, the applicant would only be required to offset permitted emissions from readiness testing and maintenance and not the emissions from emergency operation. BAAQMD requires the use of offsets to counterbalance increases in regular and predictable emissions, not increases in emissions occurring infrequently when emergency conditions arise. The potential ambient air quality impacts of emissions during emergency operations are analyzed qualitatively under CEQA environmental checklist criterion "c."

Miscellaneous Operational Emissions. Miscellaneous emissions would occur from operational activities, such as worker travel, deliveries, energy and fuel use for facility electrical, heating and cooling needs, periodic use of architectural coatings, and landscaping, etc. The applicant estimated the miscellaneous operational emissions using CalEEMod. These emissions are not required to be offset under the permitting rules, and this result is a determination by BAAQMD that they do not present a significant impact.

Table 4.3-6 provides all the annual and average daily criteria pollutant emission estimates for project operation, including readiness testing and maintenance and miscellaneous operational emissions. To recap, the average daily emissions are based on annual emissions averaged over 365 days per year. For NOx emissions during maintenance and readiness testing, the first 15 minutes of each hourly test will be evaluated as uncontrolled using the Tier 2 emissions factors and assuming SCR is not fully operational. The remaining 45 minutes of each hourly test will be assumed to be fully controlled at Tier 4 compliance levels with SCR fully operational. Using these assumptions, the NOx PTE of the project would be below 35 tpy, and, therefore, the NOx emissions would be fully offset through BAAQMD's Small Facility Banking Account at a ratio of 1:1. For the 100 hours of emergency operations (considering the BAAQMD 2019 policy [BAAQMD 2019]), the applicant assumed Tier 4 controlled emissions for the full hour with 100% load and DPF controls. Total NOx PTE from the applicant's calculation would be 19.2 tpy, which is less than the 35 tpy threshold. Therefore, the offset ratio would be 1:1 with the inclusion of the BAAQMD policy-required 100 hours.

The exact amount and the source of the NOx offsets would be confirmed through the permitting process with BAAQMD. When BAAQMD reviews the permit application for the project, it would perform a refined emissions calculation if the applicant provides a

detailed testing plan (including testing frequency, duration, and load, etc.) and the specifications from the SCR vendor. If it is uncertain whether the SCR would become effective during readiness testing and maintenance, BAAQMD may use the most conservative calculation assuming Tier 2 emissions.

NOx emissions and offsets shown in **Table 4.3-6** were calculated using composite emission factors, however, BAAQMD may require calculations assuming fully Tier 2 or fully Tier 4 operation and modify the offset requirement accordingly. Nonetheless, the NOx emissions of the gensets during readiness testing and maintenance would be fully offset through the permitting process with BAAQMD. **Table 4.3-6** shows that with NOx emissions from the readiness testing and maintenance of the gensets fully offset through the permitting process with BAAQMD, the project would not exceed the BAAQMD emissions significance thresholds. The BAAQMD CEQA Guidelines state that, if the project's daily average or annual emissions of operational-related criteria pollutants or precursors do not exceed any applicable threshold of significance listed in **Table 4.3-1**, the proposed project would not result in a cumulatively significant impact (BAAQMD 2017b). Therefore, **Table 4.3-6** shows that the project would not be expected to result in a cumulatively considerable net increase of criteria pollutants during the lifetime of the project, including the readiness testing and maintenance of the gensets.

In addition to the emissions shown in **Table 4.3-6**, ammonia would also be emitted from the urea used in the SCR system. Ammonia is considered a particulate precursor but not a criteria pollutant. Reactive with sulfur and nitrogen compounds, ammonia is common in the atmosphere primarily from natural sources or as a byproduct of tailpipe controls on motor vehicles. Currently, there are no BAAQMD-recommended models or procedures for estimating secondary particulate nitrate or sulfate formation from individual sources, such as the proposed project. BAAQMD CEQA Guidelines do not include a significance threshold for ammonia emissions. In addition, the applicant conservatively estimated the ammonia emissions of the project to be 0.29 tpy (570 lbs/yr), assuming the SCR is effective for a total of 50 hours per year per engine (GI Partners 2023c). However, it would take time for the SCR to warm up, especially during low-load readiness testing and maintenance, and, therefore, actual ammonia emissions would be less than applicant's estimates. The primary emissions of particulate matter from this project are well below the BAAQMD significance threshold and do not require additional mitigation or trigger the need for offsets. Therefore, staff expects the secondary particulate matter impacts from ammonia emissions would be less than significant and would not require additional mitigation or offsets.

The project's operations would not result in a cumulatively considerable net increase of any criteria pollutant, and therefore the impact of these very low levels of criteria pollutants would be less than significant.

TABLE 4.3-6 CRITERIA POLLUTANT EMISSIONS FROM PROJECT READINESS TESTING AND MAINTENANCE

Source Type	ROG/VOC	CO	NOx	SO_2	PM10	PM2.5
	Annual Emissions (tpy)					
Standby Generators (Testing Only) [a, b]	1.1	19.8	11.6	0.04	0.11	0.11
Miscellaneous Operational Emissions	1.1	0.35	0.21	0.002	0.06	0.03
Proposed Offsets [c]	--	--	(-11.6)	--	--	--
Total Net Emissions	2.2	20.15	0.21	0.042	0.17	0.14
BAAQMD Annual Significance Thresholds	10	--	10	--	15	10
Exceed BAAQMD Threshold? (Y/N)	N	N/A	N	N/A	N	N
	Average Daily Emissions (lbs/day) [d]					
Standby Generators (Testing Only) [b]	6.03	108.49	63.56	0.22	0.60	0.60
Miscellaneous Operational Emissions	6.03	1.92	1.15	0.01	0.33	0.16
Proposed Offsets [d]	--	--	(-63.56)	--	--	--
Total Daily Emissions	12.05	110.41	1.15	0.23	0.93	0.77
BAAQMD Daily Significance Thresholds	54	--	54	--	82	54
Exceed BAAQMD Threshold? (Y/N)	N	N/A	N	N/A	N	N

Notes:
[a] The annual emissions of the standby generators are estimated assuming readiness testing and maintenance operation would occur 50 hours per year per engine.
[b] The NOx emissions for readiness testing and maintenance are estimated using a composite emission factor where the first 15 minutes of every hour of operation are assumed to emit at Tier 2 emissions levels, with the remainder of the hour emitting at Tier 4 emission levels.
[C] The NOx emissions of the standby generators would not exceed 35 tpy. Therefore, the offset ratio would be 1:1.
[d] The average daily emissions and offsets are based on the annual emissions and offsets averaged over 365 days per year.
Sources: GI Partners 2022e, GI Partners 2022c with calculation spreadsheets, CEC staff analysis

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

This section quantifies the ambient air quality pollutant concentrations caused by the project and identifies sensitive receptors potentially impacted by project construction and operations.

This section is comprised of separate discussions addressing impacts from criteria pollutants in staff's Air Quality Impact Analysis (AQIA) and impacts from TACs in staff's HRA. Staff's AQIA discusses criteria pollutant impacts from construction and operation. The AQIA section also discusses issues associated with potential emergency operations.

Staff's HRA discusses the results of TACs for both construction and operation (readiness testing and maintenance) and cumulative sources.

Air Quality Impact Analysis for Criteria Pollutants

Staff considers any new AAQS exceedance and substantial contribution to any existing AAQS exceedance caused by the project's emissions to be substantial evidence of potentially significant impacts that would require the evaluation of potential mitigation measures. In this case, the SFBAAB is classified as nonattainment for PM10 and PM2.5 AAQS.

Construction

Less Than Significant with Mitigation Incorporated. Construction emissions of criteria pollutants are shown in **Table 4.3-5** under criterion "b" of the CEQA environmental checklist. Emissions during project construction would not exceed significance thresholds for construction activities, as established in the BAAQMD CEQA Guidelines. There is no numerical threshold for fugitive dust emissions generated during construction. The BAAQMD CEQA Guidelines recommend BMPs to control fugitive dust to conclude that impacts are less than significant. With implementation of staff's proposed mitigation measure **AQ-1** to control fugitive dust and exhaust emissions, impacts to the general population, including sensitive populations from construction emissions would be reduced to less than significant. Although project construction emissions would fall below the emissions thresholds, this section of the staff analysis explores the ambient air quality impacts of criteria pollutant emissions during construction to evaluate whether substantial pollutant concentrations could occur.

The applicant provided the modeled ambient air quality concentrations caused by the construction emissions (GI Partners 2022e). Staff reviewed the applicant's dispersion modeling files and agrees with the inputs used by the applicant and the outputs from the model for the construction AQIA for all criteria pollutants.

The applicant's AQIA uses the U.S. EPA preferred and recommended dispersion model, American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD [version 21112 for the SPPE application and version 22112 for response to data request set 1]) to estimate ambient air quality impacts. For the 1-hour NO_2 modeling analyses, the applicant used the Ambien Ratio Method #2 (ARM2) with default minimum/maximum NO_2/NOx ambient ratios of 0.5/0.9 in AERMOD, as described in U.S. EPA's *Guideline on Air Quality Models* (U.S. EPA 2017).

Meteorological Data. Meteorological data from the San José Mineta International Airport were provided by the BAAQMD for five years (2013-2017). The data was collected approximately 3 kilometers (about 1.9 miles) from the eastern edge of the 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 concurrent daily upper air sounding data from the Oakland International Airport station were also included.

Modeling Assumptions. The applicant modeled the construction equipment and vehicle exhaust emissions from the proposed project's on-site off-road equipment and off-site on-road sources, as well as the fugitive dust from construction activities.

For modeling fugitive PM10 and PM2.5 emissions, the applicant used an area source with a near-ground level release height of 0.5 meters (shown in applicant's modeling files). Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area source. To represent the construction equipment exhaust emissions, the applicant placed 32 equally spaced (25 meter) point sources (shown in applicant's modeling files) 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. The applicant assumed construction emissions would occur daily between 7 a.m. and 5 p.m. (GI Partners 2022e).

Table 4.3-7 shows the impacts of the project during the construction period. The project impact column shows the worst-case impacts of the project from modeling. The background column shows the highest concentrations, or the three-year averages of the highest concentrations for 24-hour PM2.5 and federal 1-hour NO_2 and SO_2 standards according to the forms of these standards, from the prior three years (2019-2021) from the Jackson Street station. The background PM10 and 24-hour PM2.5 concentrations are shown in **bold** because they already exceeded the corresponding limiting standards. The total impact column shows the sum of the existing background condition plus the maximum impact predicted by the modeling analysis for construction. The limiting standard column combines CAAQS and NAAQS, whichever is more stringent.

TABLE 4.3-7 MAXIMUM AMBIENT AIR QUALITY IMPACTS DURING CONSTRUCTION ($\mu g/m^3$)

Pollutant	Averaging Time	Project Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM10	24-hour	4.2	**137.1**	**141.3**	50	**283%**
	Annual	1.7	**24.8**	**26.5**	20	**132%**
PM2.5	24-hour	1.6	**56.1**	**57.7**	35	**165%**
	Annual	0.7	11.5	**12.2**	12	**101%**
CO	1-hour	14.5	2,176	2,190	23,000	10%
	8-hour	6.2	1,718	1,724	10,000	17%
NO_2 [a]	State 1-hour	7.8	112.5	120.3	339	36%
	Federal 1-hour	4.5	85.4	89.9	188	48%
	Annual	0.8	20.0	20.8	57	36%
SO_2	State 1-hour	0.028	38.0	38.0	655	6%
	Federal 1-hour	0.019	5.2	5.3	196	3%
	24-hour	0.006	3.9	3.9	105	4%

Notes: Concentrations in **bold** type are those that exceed the limiting ambient air quality standard.
[a] NO_2 impacts are evaluated with ARM2 option in AERMOD, with U.S. EPA-default minimum/maximum NO_2/NOx ambient ratios of 0.5/0.9. The state 1-hour NO_2 total impacts include the maximum modeled project impact combined with maximum NO_2 background value. The federal 1-hour NO_2 total impacts include the modeled 5-year average of 98th percentile daily maximum 1-hour NO_2 project impact combined with 3-year average of 98th percentile daily maximum 1-hour background NO_2.
Source: GI Partners 2022e, Table 3.3-15, with applicant's modeling files.

Table 4.3-7 shows that the impacts from project construction would be below the limiting standards for CO, NO_2, and SO_2. **Table 4.3-7** also shows that the existing 24-hour and annual PM10 background concentrations are already above the CAAQS. The project would, therefore, contribute to existing exceedances of the 24-hour and annual PM10 CAAQS. The modeled 24-hour PM10 concentration of 4.2 µg/m^3 from project construction would not exceed the U.S. EPA PM10 SILs of 5 µg/m^3 for 24-hour impacts. The maximum modeled annual PM10 concentration of 1.7 µg/m^3 would exceed the PM10 SILs of 1 µg/m^3 for annual impacts. However, the results provided in **Table 4.3-7** are maximum impacts predicted to occur primarily due to fugitive dust at the project fence line. The impacts would decrease rapidly with distance from the fence line, and for any location beyond 46 feet of the fence line, the annual PM10 concentration would be below the U.S. EPA PM10 SILs of 1 µg/m^3. The closest sensitive receptors to the project site are residences approximately 500 feet south, southwest and southeast of the project boundary (GI Partners 2022e, pg. 77-78). The maximum PM10 impacts at the nearest sensitive receptors would be lower than PM10 SILs levels. In addition, construction is considered short term, and the impacts to the general population and sensitive populations during construction would be reduced with the implementation of **AQ-1**. With mitigation, the PM10 impacts of the project during construction would be less than significant.

Similarly, **Table 4.3-7** also shows that the existing 24-hour PM2.5 background concentrations are already above the 24-hour PM2.5 NAAQS. Even though the annual PM2.5 background for the last three years of available data (2019-2021) at the Jackson Street station was a little bit lower than the annual PM2.5 standard of 12 µg/m^3, the SFBAAB is still classified as nonattainment for PM2.5 CAAQS. The project would therefore contribute to existing regional exceedances of the 24-hour and annual PM2.5 standards. The maximum 24-hour PM2.5 impacts of 1.6 µg/m^3 would exceed the 24-hour PM2.5 SILs of 1.2 µg/m^3. The maximum modeled 24-hour PM2.5 impact would occur at the project fence line and would decrease rapidly with distance from the fence line. For any location beyond 33 feet of the fence line, the 24-hour PM2.5 impact would be below the 24-hour PM2.5 SILs of 1.2 µg/m^3. Similarly, at the project fence line, the annual average PM2.5 impact during construction of 0.7 µg/m^3 would be greater than the BAAQMD significance threshold of 0.3 µg/m^3 and greater than the annual PM2.5 SILs for annual impacts of 0.2 µg/m^3 (U.S. EPA 2018a). However, for all receptors beyond 131 feet of the fence line, annual PM2.5 concentrations would be less than 0.2 µg/m^3 during construction. The closest sensitive receptors to the project site are residences approximately 500 feet south, southwest and southeast of the project boundary (GI Partners 2022e, pg. 77-78). The maximum modeled annual PM2.5 impacts at all sensitive receptors would be much lower than the BAAQMD CEQA Guidelines significance threshold of 0.3 µg/m^3 and U.S. EPA annual PM2.5 SILs level of 0.2 µg/m^3. The PM2.5 impacts of the project during construction would be less than significant.

Project construction would not expose sensitive receptors to substantial criteria pollutant concentrations, and this impact would be less than significant.

Operation

Less Than Significant Impact. The AQIA for project operation includes emissions from the project's diesel gensets during readiness testing and maintenance use to compare worst-case ground-level impacts with established state and federal AAQS. No other on-site stationary emission sources, such as natural gas combustion devices, are proposed. The applicant's modeling analysis is described in more detail below.

The applicant's AQIA compares worst-case ground-level impacts resulting from the project operation with established state and federal AAQS. Staff reviewed the applicant's dispersion modeling files, and staff agrees with the inputs used by the applicant and the outputs from the model for the AQIA, except for the 1-hour NO_2 NAAQS analysis as described in detail below.

Modeling Assumptions. 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. The project would include 32 diesel-fired backup generators arranged in a generation yard located on the north side of the data center. The design includes redundancy so that eight of the generators are redundant (GI Partners 2022e, pg. 11). The engines will be stacked in pairs with a stack height of 50 feet and stack diameter of 22 inches (GI Partners 2022c, Table AQ1-1).

All engines could be tested or used at any load condition. The applicant's analysis is supported by a screening review of engines at four different load conditions representing 25, 50, 75, and 100 percent load settings to determine that the worst-case concentrations occur during 100 percent load (GI Partners 2022f, Response to Data Request 5).

The application assumes one generator would undergo readiness testing and maintenance at a time (GI Partners 2022e). The applicant proposes to accept a permit condition from BAAQMD to limit testing to no more than one generator at a time (GI Partners 2022f, Response to Data Request 8). Additionally, the modeling also presumes that routine readiness testing would be limited to occur within certain hours of the day. The applicant proposes to accept a permit condition from BAAQMD for limiting readiness testing to a 10-hour period between 7:00 a.m. and 5:00 p.m. daily (GI Partners 2022f, Response to Data Request 9).

For NOx emissions calculation during these tests, the engine would warm up from an uncontrolled Tier 2 state during the first 15 minutes to a fully controlled Tier 4 state for the remainder of the one-hour test (GI Partners 2022e).

Refined Modeling Analyses. The modeling considers the use of the diesel-fired gensets in all proposed readiness testing and maintenance scenarios. The AQIA for project operation includes generator operating assumptions that vary depending on the averaging period of the applicable CAAQS or NAAQS. Refined modeling for all 1-hour averaging periods considers each single generator could be used at 100 percent load.

Modeling for comparison to the short-term NAAQS follows the applicable multi-year statistical forms (one-hour NO_2 and SO_2 and 24-hour PM2.5). Similarly, for the 1-hour NO_2 and SO_2 CAAQS impacts analyses, the applicant reported the highest 1-hour NO_2 and SO_2 modeled concentrations in a manner consistent with the forms of the CAAQS.

Modeled 1-hour NO_2 concentrations reflect use of the ARM2 method, which assumes an ambient equilibrium between NO and NO_2, as a second-tier approach for NO_2 analysis as defined in U.S. EPA's *Guideline on Air Quality Models* (U.S. EPA 2017). The approach uses a default minimum ambient NO_2/NOx ratio of 0.5 and a maximum ambient ratio of 0.9.

For analysis relative to the state one-hour NO_2 standard, the maximum modeled 1-hour NO_2 results from AERMOD using ARM2 are added to the maximum 1-hour background NO_2 value from the Jackson Street monitoring site (2019-2021) to arrive at the total NO_2 impact to compare with the 1-hour NO_2 CAAQS (GI Partners 2022e). Staff's review for the state 1-hour NO_2 standard confirmed the applicant's ARM2 runs as being representative of worst-case NO_2 1-hour results. For the 1-hour NO_2 NAAQS analysis, the applicant used an hourly emission rate averaged from the annual emissions of the intermittent testing (GI Partners 2022e, Table 3.3-14). Staff independently modeled the maximum hourly NO_2 emissions without annual averaging to arrive at the 8th-highest of the daily maximum 1-hour values, which is added to 98th percentile daily maximum 1-hour background NO_2 concentration, consistent with U.S. EPA guidance for the NO_2 NAAQS (U.S. EPA 2011).

Although the engines will typically only be tested individually for up to one hour at any one time, modeling for comparison with the 24-hour PM10 and PM2.5 standards assumes that each engine operates up to 10 hours/day (7:00 a.m. to 5:00 p.m.) to conservatively represent 10 different engines operating one hour each in any one day (GI Partners 2022e).

Table 4.3-8 shows the maximum impacts from project operation, including readiness testing and maintenance. The project impact column shows the worst-case impacts of the project from modeling. The background column shows the highest (or three-year averages for the 24-hour PM2.5 and federal 1-hour SO_2 standards) of the background concentrations from the last three years of representative data (2019-2021) from the Jackson Street station. The background PM10 and 24-hour PM2.5 concentrations are shown in **bold** because they already exceeded the corresponding limiting standards. Except for the 1-hour NO_2 total impacts, the total impact column shows the sum of the existing background condition plus the maximum impact predicted by the modeling analysis for readiness testing and maintenance. The limiting standard column combines CAAQS and NAAQS, whichever is more stringent.

Table 4.3-8 shows that the project's stationary sources would not cause exceedances of the CO, NO_2, or SO_2 standards. **Table 4.3-8** also shows that the existing PM10 and 24-hour PM2.5 background concentrations are already above the limiting standards. Even though the annual PM2.5 background for the last three years of available data (2019-2021) at the Jackson Street station was a little bit lower than the annual PM2.5 standard

of 12 µg/m^3, the SFBAAB is still classified as nonattainment for PM2.5 CAAQS. The project would, therefore, contribute to existing regional exceedances of the PM10 and PM2.5 standards.

The modeled PM10 concentrations from the project's operation in **Table 4.3-8** are well below the U.S. EPA PM10 SILs of 5 µg/m^3 for 24-hour impacts and 1 µg/m^3 for annual impacts. Similarly, the maximum modeled 24-hour PM2.5 concentrations from project operation would not exceed the U.S. EPA PM2.5 SILs of 1.2 µg/m^3 for 24-hour impacts at any location. **Table 4.3-8** also shows that the annual PM2.5 project impacts of 0.02 µg/m^3 would not exceed the U.S. EPA PM2.5 of 0.2 µg/m^3 for annual impacts or the project-level BAAQMD CEQA Guidelines threshold for annual-average PM2.5 of 0.3 µg/m^3, for risk and hazards.

Table 4.3-8 shows that use of the diesel-fired gensets in all proposed readiness testing and maintenance scenarios would not expose sensitive receptors to substantial criteria pollutant concentrations, and therefore this impact would be less than significant.

TABLE 4.3-8 MAXIMUM AMBIENT AIR QUALITY IMPACTS DURING OPERATION (µg/m^3)

Pollutant	Averaging Time	Project Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM10 [a]	24-hour	0.5	**137.1**	**137.6**	50	**275%**
	Annual	0.02	**24.8**	**24.8**	20	**124%**
PM2.5 [a]	24-hour	0.5	**56.1**	**56.6**	35	**162%**
	Annual	0.02	11.5	11.5	12	96%
CO	1-hour	397.1	2,176	2,573	23,000	11%
	8-hour	251.0	1,718	1,969	10,000	20%
NO_2 [b,c]	State 1-hour	116.6	112.5	229.1	339	68%
	Federal 1-hour	93.7	85.4	179.1	188	95%
	Annual	1.6	20.0	21.6	57	38%
SO_2 [c]	State 1-hour	0.8	38.0	38.7	655	6%
	Federal 1-hour	0.8	5.2	6.0	196	3%
	24-hour	0.2	3.9	4.1	105	4%

Notes: Concentrations in **bold** type are those that exceed the limiting ambient air quality standard.
[a] The 24-hour PM10 and PM2.5 impacts are based on the daily emissions of 10 engines undergoing readiness testing and maintenance in any given day. To compute the total impacts for the 24-hour PM2.5 NAAQS, staff conservatively combined the maximum modeled 24-hour PM2.5 impacts to the three-year average of 98th percentile PM2.5 background.
[b] The NO_2 impacts are evaluated using ARM2 option in AERMOD.
[c] Impacts for the 1-hour NO_2 and SO_2 CAAQS are based on the maximum 1-hour modeled concentrations as these standards are "values that are not to be exceeded." Impacts for the 1-hour statistical-based NO_2 NAAQS use modeled 8th-highest of the daily maximum 1-hour values with 98th percentile daily maximum 1-hour background NO_2 concentration to reflect the form of the standard.
Source: GI Partners 2022e, Table 3.3-14, with CEC staff analysis.

Localized CO Concentrations. Engine exhaust may elevate localized CO concentrations, resulting in "hot spots." Receptors exposed to these CO hot spots may

have a greater likelihood of developing adverse health effects. CO hot spots are typically observed at heavily congested intersections where a substantial number of vehicles idle for prolonged durations throughout the day. BAAQMD screening guidance indicates that a project would not exceed the CO significance threshold if a project's traffic projections indicate traffic levels would not increase at any affected intersection to more than 44,000 vehicles per hour or at any affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (BAAQMD 2017b).

The proposed project would generate vehicle trips to the site. These trips would include workers and material and equipment deliveries. It is unlikely that the addition of vehicle trips from the project on any roadway in the vicinity of the project site would result in an exceedance of the BAAQMD screening threshold. As a result, the additional vehicle trips associated with the project would result in a negligible effect on CO concentrations in the vicinity of the project site.

Table 4.3-7 and **Table 4.3-8** show the maximum CO concentrations resulting from the project's construction and operation and modeling results confirm that impacts would be well below the limiting standards and BAAQMD CEQA Guidelines significance thresholds of 20.0 ppm (23,000 µg/m^3) for 1-hour average concentrations and 9.0 ppm (10,000 µg/m^3) for 8-hour average concentrations.

Localized CO impacts during construction and operation would not expose sensitive receptors to substantial pollutant concentrations, and this impact would be less than significant.

Emergency Operations Impacts for Criteria Pollutants

This section addresses the potential for emergency situations that could trigger the unplanned operation of the project's diesel-fired gensets. Emergency use of the gensets could occur in the event of a power outage or other disruption, upset, or instability that triggers a need for emergency backup power at the project.

The air quality impacts of genset operation during emergencies are not quantified below because the impacts of emergency operations are typically not evaluated during facility permitting and local air districts do not normally conduct an air quality impact assessment of such impacts. CEC staff assessed the likelihood of emergency events but finds that modeling the air quality impacts of emergency operations would require a host of unvalidated, unverifiable, and speculative assumptions about when and under what circumstances such a hypothetical emergency would occur. Such a speculative analysis is not required under CEQA (CEQA Guidelines §§ 15064(d)(3), 15145), and, most importantly, would not provide meaningful information by which to determine project impacts.

Emissions that occur during the emergency use of the gensets would not occur on a regular or predictable basis (see **Appendix B** for more information). During the permitting process, BAAQMD policy requires facilities to presume that each of their

generators will experience 100 hours per year of emergency operation when calculating their PTE for determining the applicability of certain permitting regulations (BAAQMD 2019).

Although normally excluded from ambient air quality impact analysis during permit review, BAAQMD comments on the NOP of the project requested that this air quality analysis include various scenarios of backup power generation operations beyond routine testing and maintenance (BAAQMD 2023b). Scoping comments on a previous similar project (the CA3 Data Center project) from BAAQMD provided a review of data centers that initiated operation of diesel engines for "non-testing/non-maintenance" purposes, for the purpose of informing staff's consideration of scenarios of backup power generation operations beyond routine testing and maintenance (BAAQMD 2021).

Staff reviewed these BAAQMD comments regarding the use of diesel engines for "non-testing/non-maintenance" purposes and confirmed that these types of events are infrequent, irregular, and unlikely and the resulting emissions are not easily predictable or quantifiable (see **Appendix B** for more information). The BAAQMD comments identified extended durations of standby generator engine use occurred for "non-testing/non-maintenance" purposes, mostly due to extreme events, within the 13-month record of the data. The 13-month period of BAAQMD's review (September 1, 2019, to September 30, 2020) included the implementation of Pacific Gas and Electric Company's Public Safety Power Shutoff (PSPS), severe wildfires, several California Independent System Operator (CAISO)-declared emergencies, and winter storms.

Including usage during the extreme events, 1,877 engine-hours of diesel engine use occurred at 20 data centers for "non-testing/non-maintenance" purposes (less than half of the 45 facilities included in the review, and less than a third of such facilities under BAAQMD's jurisdiction at the time of data collection) during the surveyed 13-month period. BAAQMD's review covered 288 individual diesel engines that operated over a 13-month record. Because the backup generator engines were collectively available for over 2.74 million engine-hours during the 13-month period (288 engines * 9,504 hours in the 13-month record), and they were used for "non-testing/non-maintenance" purposes for 1,877 engine-hours, at those facilities where operation occurred, the engines entered into emergency operations during 0.07 percent of their available time (1,877 / 2.74 million). Staff's analysis of BAAQMD's information found that the average runtime for each diesel backup generator engine per event in BAAQMD's review was approximately 5.0 hours. Based on this data, staff determined that the emergency use of the standby generator engines was infrequent and of short duration.

Due to the number of factors that need to be considered, using an air quality model to evaluate ambient air quality impacts during emergency operations would require substantial and inappropriate speculation and would render the results of any such exercise too speculative to be meaningful. This remains especially true when neither the CEC nor any other agency known to CEC has established or used in practice a threshold of significance by which to interpret air quality modeling results from emergency operations. Emergency operation would be very infrequent, and emergency operations

would not occur routinely during the lifetime of the facility. Accordingly, the potential for any adverse impacts to ambient air quality concentrations would be a very-low probability event.

Thus, staff concludes that assessing the impacts of emergency operation of the gensets would be speculative due to the infrequent, irregular, and unplanned nature of emergency events. Emissions and impacts during emergency operation are not objectively predictable or quantifiable.

Because of the infrequent nature of emergency conditions and the reliability of the grid as detailed in **Appendix B**, the project's emergency operation would be unlikely to expose sensitive receptors to substantial concentrations of criteria air pollutants.

Cumulative Impacts for Criteria Pollutants

Under CEQA environmental checklist criterion "b" above, staff concludes that the project emissions would not exceed the BAAQMD significance thresholds and with the implementation of staff's proposed mitigation measure **AQ-1** to reduce impacts to the general population and sensitive populations during construction. The project's NOx emissions would be fully offset for readiness testing and maintenance. Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant, and these impacts to the general population and sensitive populations would be less than significant with mitigation incorporated.

Health Risk Assessment for Toxic Air Contaminants

The HRA provides three separate analyses, based on substantial evidence as described, that supports the conclusion that the project would not expose sensitive receptors to substantial pollutant concentrations. An analysis was conducted for (1) the period of project's construction, (2) the period of operation, which consists of readiness testing and maintenance, and (3) the cumulative risk and hazards for the project that includes the project's impact with the impacts of existing sources in the area.

The HRA estimated risks of cancer, non-cancer chronic exposure, and non-cancer acute exposure for residential, worker, and sensitive receptors, including (GI Partners 2022e, pp. 82):

- Point of maximum impact (PMI) – this receptor represents the highest concentration and risk point on the receptor grid for the analysis under consideration.
- Maximum exposed individual residential receptor (MEIR) – this receptor represents the maximum impacted actual residential location on the grid for the analysis under consideration.
- Maximum exposed individual worker receptor (MEIW) – this receptor represents the maximum impacted actual worker location on the grid for the analysis under consideration.

- Maximum exposed individual sensitive receptor (MEIS) – 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.

As required by the 2015 OEHHA Guidance, sensitive receptor (including residential) cancer risks were estimated assuming exposure beginning in the third trimester of pregnancy and worker cancer risk was estimated assuming an 8-hour-per-day, 250 day-per-year exposure, beginning at the age of 16 (OEHHA 2015).

Air would be the dominant pathway for public exposure to chemical substances released by the project. Emissions to the air would consist primarily of combustion by-products produced by the diesel-fired emergency standby engines. Direct inhalation is considered the most likely exposure pathway. However, to be conservative, additional pathways were also included in the HRA. The HRA was conducted in accordance with guidance established by the OEHHA (OEHHA 2015) and the CARB (GI Partners 2022e, pp. 79).

Cancer Risk

Cancer risk is the probability or chance of getting 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 getting cancer. Under various state and local regulations, an incremental cancer risk greater than 10-in-1 million due to a project is considered to be a significant impact on public health. For example, the 10-in-1-million risk level is used by the Air Toxics Hot Spots Program (AB 2588) and California's Proposition 65 as the public notification level for air toxic emissions from existing sources (GI Partners 2022e, pp. 80).

Health risks potentially associated with concentrations of carcinogenic pollutants in air were calculated as estimated excess lifetime cancer risks. The excess lifetime cancer risk for a pollutant is estimated as the product of the concentration in air and a unit risk value. The unit risk value is defined as the estimated probability of a person contracting cancer as a result of constant exposure to an ambient concentration of 1 $\mu g/m^3$ over a 70-year lifetime. In other words, it represents the increased cancer risk associated with continuous exposure to a concentration in air over a pre-defined period, i.e., usually a 30 or 70-year lifetime (GI Partners 2022e, pp. 82).

Non-Cancer Risk

Non-cancer health effects can be either chronic or acute. 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). In other word, an REL is a concentration in air at or below which no adverse health effects are anticipated. Non-cancer health risks are measured in terms of a hazard quotient (HQ), 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 (HIs) for each organ system. A HI of less than 1.0 is considered to be an insignificant health risk. For this HRA, all hazard quotients were summed regardless of target organ. This method leads to a conservative (upper bound) assessment. RELs used in the hazard index calculations were those published in the CARB/OEHHA listings dated August 2018 (GI Partners 2022e, pp. 80-81).

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. RELs are based on the most sensitive adverse effects reported in the medical and toxicological literature (GI Partners 2022e, pp. 82). Chronic toxicity is defined as adverse health effects from prolonged chemical exposure, caused by chemicals accumulating in the body. 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. 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 HRA considers only DPM, and DPM has no acute REL, acute HI values were not calculated (GI Partners 2022e, p. 81).

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 10/2020) (GI Partners 2022e, pp. 82).

Construction HRA

Less Than Significant Impact. As mentioned above, onsite construction emissions from construction of the proposed project would 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 BBGF are negligible but are included in the emission calculations for the BDC. Offsite construction emissions would be derived primarily from materials transport to and from the site, and worker travel. Emissions from the 24-month construction period were estimated using the CalEEMod program (GI Partners 2022e, pp.67).

Emissions of toxic pollutants potentially associated with the facility were estimated using emission factors for PM10 derived from the New Source Performance Standards for compression ignited engines (40 CFR 60 Subpart IIII-EPA Tier 2 emissions standards), and EPA Tier 4 standards values, in conjunction with the Cummins supplied operational parameters per the engine brochures and specifications (GI Partners 2022e, pp. 81). Two-year construction period was used for HRA, and DPM is the surrogate compound for construction equipment diesel exhaust (GI Partners 2022e, Table 3.3-22).

Staff reviewed the applicant's modeling files and agreed with the inputs used by the applicant and the outputs from the model for carcinogenic and chronic health risks. There

are no acute risks analyzed for construction HRA. Acute (non-cancer) health risks were not estimated because there is no acute inhalation REL for DPM, indicating that DPM is not known to result in acute health hazards (GI Partners 2022e, pp.81). The results of the construction HRA are presented in **Table 4.3-9**. It shows that the maximum cancer risk impact, and chronic HIs at the MEIR, MEIS, and MEIW during the construction of the project would be less than BAAQMD's significance thresholds. Therefore, staff concluded that the health risks of the project construction would be a less than significant impact.

Note that the risk values shown in **Table 4.3-9** are the highest of those modeled for each type of sensitive receptors. The risk values at other locations for each type of sensitive receptors would be lower than those shown in **Table 4.3-9**. Health risks at nearby worker/residential/sensitive receptors would all be below the significance thresholds. The health risks from project construction would be less than significant, and no mitigation would be necessary. Implementation of **AQ-1** would further reduce the health impacts.

TABLE 4.3-9 CONSTRUCTION – MODELED RECEPTOR MAXIMUM HEALTH RISK

Receptor Type	Cancer Risk Impact (in one million)	Chronic Non-Cancer Hazard Index (HI) (unitless)	Acute Non-Cancer Hazard Index (HI) (unitless)
MEIR[1]	0.144	0.000454	-
MEIS[2]	0.0342	0.000254	-
MEIW[3]	0.0903	0.000764	-
BAAQMD Threshold	10	1	1

Notes:
[1] Maximum exposed individual residential receptor (MEIR). It is located approximately 1100 ft southeast of the project boundary.
[2] Maximum exposed individual sensitive receptor (MEIS). It is the Bracher Elementary School and is located approximately 1400 ft southeast of the project boundary.
[3] Maximum exposed individual worker receptor (MEIW). It is located in a parking lot due east of the project. Risks at the worker receptors include a Worker Adjustment Factor of 4.2 (7/5*24/8) to account for the hours a worker is present at a site.
Source: GI Partners 2022e, Table 3.3-22, and HRA modeling files provided by the applicant,

Operation HRA

Less Than Significant Impact. Primary operation emissions would result from the 32 standby diesel generators, offsite vehicle trips for worker commutes and material deliveries. Secondary operational emissions from facility upkeep, such as architectural coatings, consumer product use, landscaping, water use, waste generation, fuel storage, and electricity use, were considered de minimus (GI Partners 2022e, pp. 81).

DPM was the only TAC considered to result from operation of the BBGF (GI Partners 2022e, p.68). There would also be some VOC emissions (Benzene, Tolune, and Xylenes) from the ultra low sulfur diesel (ULSD) day tank. Since the emissions of these three speciated VOC HAPs from diesel storage tank losses would be much lower than the significance threshold of BAAQMD Rule 2-5, Table 2-5-1 (Toxics NSR), it indicates their impacts would be insignificant. Therefore, they were not included in the operations HRA analysis (GI Partners 2022f, pp.8).

As mentioned above, the proposed backup engines would be certified as EPA Tier 2 units equipped with DPFs and other add-on controls to meet the Tier 4 standards (GI Partners 2022e, pp. 81). DPM emissions resulting from diesel stationary combustion were assumed equal to PM10/2.5 emissions. For conservative evaluation purposes, it was assumed that testing (weekly, monthly, quarterly, annual, and special testing) would occur for no more than 50 hours per year. 50 hours per year per engine is the limit specified by the ATCM for Stationary Toxic Compression Ignition Engines (Title 17, Section 93115, CCR). However, it is the applicant's experience that each engine would be operated for considerably less than 50 hours a year (GI Partners 2022e, pp. 69).

Emissions of toxic pollutants potentially associated with the facility were estimated using emission factors for PM10 derived from the New Source Performance Standards for compression ignited engines (40 CFR 60 Subpart IIII-EPA Tier 2 emissions standards), and EPA Tier 4 standards values, in conjunction with the Cummins supplied operational parameters per the engine brochures and specifications (GI Partners 2022e, pp. 81).

Table 4.3-10 shows that the cancer risks and chronic HIs at the PMI, MEIR, MEIS, and MEIW during the project's operation. Again, since this assessment considers only DPM, and DPM has no acute REL, acute HI values were not calculated. The results of **Table 4.3-10** show that the maximum cancer risk impact, and chronic HIs, and PM2.5 concentrations at the PMI, MEIR, MEIS, and MEIW during the operation of the project would be less than the BAAQMD's significance thresholds. Therefore, staff concluded that the health risks of the project operation would be a less-than-significant impact.

It should be noted that the risk values shown in **Table 4.3-10** are the highest of those modeled for each type of sensitive receptors. The risk values at other locations for each type of sensitive receptors would be lower than those shown in **Table 4.3-10**. Health risks at nearby worker/residential/sensitive receptors would all be below the significance thresholds. The health risks from the project's operation would be less than significant, and no mitigation would be necessary.

In conclusion, staff finds the health risks at sensitive receptor locations would be less than the BAAQMD CEQA Guidelines significance thresholds shown in **Table 4.3-1**. Staff concludes that the health risks from the project's routine operation would be less than significant.

TABLE 4.3-10 OPERATION – MODELED RECEPTOR MAXIMUM HEALTH RISK

Receptor Type	Cancer Risk Impact [6] (in one million)	Chronic Non-Cancer Hazard Index (HI) [6] (unitless)	Acute Non-Cancer Hazard Index (HI) [7] (unitless)	PM2.5 Concentration [6] (µg/m^3)
MEIR[1]	2.72	0.000698	-	0.0211
MEIS[2]	0.787	0.000182	-	0.00091
MEIW[3]	4.13	0.00318	-	0.01588
BAAQMD Threshold	10	1	1	0.3

[1] Maximum exposed individual residential receptor (MEIR). It is located approximately 1100 ft southeast of the project boundary.

[2] Maximum exposed individual sensitive receptor (MEIS). It is the Bracher Elementary School and is located approximately 1400 ft southeast of the project boundary.
[3] Maximum exposed individual worker receptor (MEIW). It is located in a building due east of the project. Risks at the worker receptors include a Worker Adjustment Factor of 4.2 (7/5*24/8) to account for the hours a worker is present at a site.
Source: GI Partners 2022e, Table 3.3-20 and 3.3-21, and HRA modeling files provided by the applicant,

Emergency Operations HRA

The HRA for genset operation during emergencies are not quantified either. Please refer to the previous subsection "Emergency Operations Impacts for Criteria Pollutants" under CEQA environmental checklist criterion "c," (p. 4.3-40) for details.

Cumulative HRA

Less Than Significant Impact. This discussion addresses the impacts from cumulative sources in comparison to the BAAQMD significance thresholds for risk and hazards from cumulative sources (BAAQMD, 2017b). The cumulative HRA is an assessment of the project's impact summed with the impacts of existing sources within 1,000 feet of the project. The results of this cumulative HRA are compared to the following BAAQMD CEQA cumulative thresholds: no more than 100 cancer cases per million; a chronic HI of no more than 10.0; and PM2.5 concentrations of no more than 0.8 μg/m^3 annual average PM2.5 concentrations. The BAAQMD CEQA Guidelines for assessing cumulative health risk impacts recommend investigating all sources of TACs within 1,000 feet of a proposed project (BAAQMD 2017b).

The applicant's cumulative HRA identified the maximum health impacts for MEIR (GI Partners 2022e, pp. 87-92). The applicant's cumulative HRA shows that the maximum cumulative cancer risk would be 23.99 in a million, lower than the threshold of 100 in a million; the maximum cumulative HI would be 0.04, below the threshold of 10; and the maximum cumulative PM2.5 concentration would be 0.125 μg/m3, lower than the threshold of 0.8 μg/m3 (GI Partners 2022e, Table 3.3-32)

Staff conducted an independent cumulative HRA, assessing the proposed project's impact summed with the impacts of existing sources within 1,000 feet[5] of the maximally exposed sensitive receptors, including MEIR, MEIS, and MEIW. The results of staff's cumulative HRA are compared to the BAAQMD significance thresholds (BAAQMD 2017b) in **Table 4.3-11**, **Table 4.3-12**, and **Table 4.3-13**. Staff's cumulative HRA includes four major categories of sources: (1) existing stationary sources; (2) CA3 Backup Generating Facility – Vantage; (3) surrounding highways, main streets, and railways; and (4) the project. The project would not cause a cumulatively considerable contribution along with existing and foreseeable projects to cancer risk, non-cancer HI, and PM2.5 concentrations. The analysis demonstrates that the cumulative impacts would be below the BAAQMD CEQA Guidelines cumulative thresholds.

5 Per the BAAQMD CEQA Guidelines, the zone of influence for the cumulative threshold is 1,000 feet from the source or receptor.

1. Existing Stationary Sources

The cumulative cancer risk, non-cancer HI, and PM2.5 concentrations of existing stationary sources were first retrieved from BAAQMD'S Stationary Source Screening Map[6], a GIS map that provides the locations of stationary sources permitted by BAAQMD. Stationary sources contributing health risks and hazard impacts within a 1,000-foot radius of the project site were determined.

Then the risks were calculated using BAAQMD's Health Risk Calculator[7] to refine screen-level cancer risk, non-cancer health hazard index, and PM2.5 concentrations. Appropriate distance multipliers were applied to represent adjusted risk and hazard impacts that can be expected with farther distances from the sources of emissions.

Staff searched the risk data for existing stationary sources within 1,000 feet of MEIR, MEIS, and MEIW.

2. CA3 Backup Generating Facility – Vantage

Staff also included the CA3 Backup Generating Facility – Vantage, which is a proposed project that would be located adjacent on the southeast side of the project. The CA3 would consist of a total of forty-four (44) 2.75-MW diesel fired generators that would be used exclusively to provide up to 96 MW of backup emergency generation to support the CA3 Data Center, to be located at 2590 Walsh Avenue in Santa Clara, California[8].

3. Surrounding Highways, Main Streets, and Railways

Mobile impacts were determined using BAAQMD's raster tools, which provide impacts from major streets, highways, and railroads[9]. The tools developed by BAAQMD incorporate risk assessment procedures from the 2015 OEHHA Air Toxics Hot Spots Program Guidance. The cancer risk and PM2.5 concentration from surrounding highways, major streets and railways were determined using BAAQMD raster files that incorporate annual average daily traffic (AADT) per EMFAC 2014 data for fleet mix and includes OEHHA's 2015 Guidance Methods. The raster files encompass highways, major streets, and rails with greater than 30,000 AADT. Staff received the raster files directly from BAAQMD, and then extracted the risk numbers by ArcGIS for the surrounding highways, main streets, and railways.

6 The BAAQMD'S Permitted Sources Risk and Hazards Map can be accessed here: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

7 The BAAQMD Health Risk Calculator Beta 5.0 can be downloaded here: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/tools/public-baaqmd-health-risk-calculator-beta-5-0-xlsx-xlsx.xlsx?la=en

8 https://www.energy.ca.gov/powerplant/backup-generating-system/ca3-backup-generating-facility

9 https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/tools/2020_02_20-methodology-risk-and-hazards-screening-tool-pdf.pdf?la=en

4. The Project

For the project, please see the result of the applicant's HRA for facility-wide operation of BBGF presented in **Table 4.3-10**.

Table 4.3-11, Table 4.3-12, and **Table 4.3-13** summarize the results of the staff cumulative HRA and compare them to the BAAQMD significance thresholds for cumulative risk and hazards. The cumulative cancer risk, HI, and PM2.5 concentration were conservatively calculated using the maximum value in relation to the maximally exposed sensitive receptors as well as at the nearest residences. **Table 4.3-12, Table 4.3-13**, and **Table 4.3-14** show that none of the project's health risks would exceed the cumulative health risk thresholds when summed with the health risks of cumulative sources within 1,000 feet of each receptor.

In conclusion, staff finds that cumulative health risks at all sensitive receptor locations would be less than the BAAQMD CEQA Guidelines significance thresholds shown in **Table 4.3-1**. Staff concludes that the project's contribution to the cumulative impact of TAC emissions would be less than significant.

TABLE 4.3-11 SENSITIVE RECEPTOR CANCER RISK (PER MILLION) FROM CUMULATIVE SOURCES

	Cancer Risk		
Sources of Cumulative Impacts	**MEIR[a]**	**MEIS[b]**	**MEIW[c]**
Existing Stationary Sources	2.1652	0.3480	7.089
CA3[d]	9.9	9.9	9.9
Surrounding Highways, Major Streets, and Railways	72.9851	40.8988	60.8248
Bowers Backup Generating Facility[e]	2.72	0.787	4.13
Total - Cumulative Sources	87.7703	51.9338	81.9438
Significance Threshold	100	100	100
Potential Significant Impact?	No	No	No

Notes:
[a] Maximally Exposed Individual Resident (MEIR). It is located approximately 1100 ft southeast of the project boundary. The cumulative health risk impact of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[b] Maximum exposed individual sensitive receptor (MEIS). It is the Bracher Elementary School and is located approximately 1400 ft southeast of the project boundary. The cumulative health risk impact of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[c] Maximum exposed individual worker receptor (MEIW). It is located in a building due east of the project. Risks at the worker receptors include a Worker Adjustment Factor of 4.2 (7/5*24/8) to account for the hours a worker is present at a site. The cumulative health risk impact of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[d] CA3 Backup Generating Facility – Vantage. It is proposed to be located southeast of the project. The cancer risk of CA3 was retrieved from CEC staff's FEIR, and was not discounted by the distance to each receptor. Therefore, the risk number is very conservative.
Source: CEC staff analysis of data from BAAQMD

TABLE 4.3-12 SENSITIVE RECEPTOR CHRONIC HAZARD INDICES FROM CUMULATIVE SOURCES

Sources of Cumulative Impacts	Chronic Hazard Index		
	MEIR[a]	MEIS[b]	MEIW[c]
Existing Stationary Sources	0.0021	0.0001	0.012
CA3[d]	0.0108	0.0108	0.0108
Surrounding Highways, Major Streets, and Railways	No Data Available[f]	No Data Available[f]	No Data Available[f]
Bowers Backup Generating Facility[e]	0.000698	0.0002	0.0032
Total - Cumulative Sources	0.0136	0.0111	0.0260
Significance Threshold	10	10	10
Potential Significant Impact?	No	No	No

Notes:
[a] Maximally Exposed Individual Resident (MEIR). It is located approximately 1100 ft southeast of the project boundary. The cumulative health risk impact of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[b] Maximum exposed individual sensitive receptor (MEIS). It is the Bracher Elementary School and is located approximately 1,400 ft southeast of the project boundary. The cumulative health risk impact of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[c] Maximum exposed individual worker receptor (MEIW). It is located in a building due east of the project. The cumulative health risk impact of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[d] CA3 Backup Generating Facility – Vantage. It is proposed to be located southeast of the project. The cancer risk of CA3 was retrieved from CEC staff's FEIR, and was not discounted by the distance to each receptor. Therefore, the risk number is very conservative.
[f] No data available — BAAQMD staff did not provide data for these sources.
Source: CEC staff analysis of data from BAAQMD

TABLE 4.3-13 SENSITIVE RECEPTOR ANNUAL PARTICULATE MATTER (PM2.5) CONCENTRATIONS (µg/m^3) ROM CUMULATIVE SOURCES

Sources of Cumulative Impacts	Annual DPM/PM2.5 Concentration		
	MEIR[a]	MEIS[b]	MEIW[c]
Existing Stationary Sources	0.0027	0.0004	0.009
CA3[d]	0.035	0.035	0.035
Surrounding Highways, Major Streets, and Railways	0.5072	0.4251	0.5490
Bowers Backup Generating Facility[e]	0.0211	0.0009	0.0159
Total - Cumulative Sources	0.5661	0.4614	0.6089
Significance Threshold	0.8	0.8	0.8
Potential Significant Impact?	No	No	No

Notes:
[a] Maximally Exposed Individual Resident (MEIR). It is located approximately 1100 ft southeast of the project boundary. The cumulative health risk impact of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[b] Maximum exposed individual sensitive receptor (MEIS). It is the Bracher Elementary School and is located approximately 1,400 ft southeast of the project boundary. The cumulative health risk impact

of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[c] Maximum exposed individual worker receptor (MEIW). It is located in a building due east of the project. The cumulative health risk impact of the proposed project was calculated including the stationary and mobile sources within 1,000 ft of this receptor. Staff used the data provided by BAAQMD.
[d] CA3 Backup Generating Facility – Vantage. It is located southeast of the project. The cancer risk of CA3 was retrieved from CEC staff's FEIR, and was not discounted by the distance to each receptor. Therefore, the risk number is very conservative.
Source: CEC staff analysis of data from BAAQMD.

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

This section considers impacts that may arise from emissions other than criteria air pollutants and TACs, such as emissions that may lead to odors.

BAAQMD states that, while offensive odors rarely cause direct health impacts or any physical harm, they still can be very unpleasant and lead to considerable distress among the public, often generating citizen complaints to local governments and BAAQMD (BAAQMD 2017b). Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact. Odor impacts on residential areas and other sensitive receptors warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

BAAQMD CEQA Guidelines recommend a two-step process for determining the significance of potential odor impacts. First, determine whether the project would result in an odor source affecting receptors within the distances indicated in **Table 4.3-15**. Second, if the proposed project would result in an odor source and receptors within the screening level distances indicated in **Table 4.3-15**, a more detailed analysis should be conducted (BAAQMD 2017b).

TABLE 4.3-15 PROJECT SCREENING TRIGGER LEVELS FOR POTENTIAL ODOR SOURCES

Land Use/Type of Operation	Project Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile

TABLE 4.3-15 PROJECT SCREENING TRIGGER LEVELS FOR POTENTIAL ODOR SOURCES

Land Use/Type of Operation	Project Screening Distance
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles

Source: BAAQMD 2017b, Table 3-3.

The project is not a type of operation that is classified as a typical odor source by BAAQMD, as shown in **Table 4.3-15**. The diesel engine generators would not be stationary sources of a type that are typically known to cause significant odor impacts.

Construction

Less Than Significant Impact. Minor odor sources during construction activities include diesel exhaust from heavy-duty equipment. Odors from construction activities near existing receptors would be temporary in nature and dissipate as a function of distance. Accordingly, the construction of the project is not expected to result in substantial emissions that may lead to odor impacts or impacts of emissions other than those of criteria pollutants and TACs identified elsewhere in this analysis.

Fugitive dust emissions can also create a nuisance that can cause adverse effects. The project is proposing to comply with the BAAQMD construction fugitive dust control BMPs and so should not have substantial fugitive dust emissions during construction that could adversely affect a substantial number of people.

Therefore, the construction of the project would not result in other emissions, such as those leading to odors, that could adversely affect a substantial number of people and would have a less than significant impact.

Operation

Less Than Significant Impact. Potential odor sources from the project's readiness testing and maintenance along with emergency operation would include diesel exhaust from genset readiness testing and maintenance, trash pick-up and other heavy-duty delivery vehicles, and the occasional use of architectural coatings during routine maintenance. When compared to existing odor sources near the project site, which include heavy and light industrial uses, odor impacts from project readiness testing and maintenance along with emergency operations would be similar.

Once built and operating, the project would have no notable emissions other than those of criteria pollutants and TACs identified elsewhere in this analysis. Therefore, nuisance impacts would not be likely to occur during operation, including readiness testing and maintenance or emergency operation. During readiness testing and maintenance and during emergency operation, the project would not result in odors or other emissions that could adversely affect a substantial number of people and would have a less than significant impact related to odors. In conclusion, staff finds that the project would not

likely create objectionable odors affecting a substantial number of people and impacts would be less than significant.

4.3.4 Mitigation Measures

AQ-1: To ensure that fugitive dust impacts are less than significant, the project will implement the Bay Area Air Quality Management District (BAAQMD) recommended Best Management Practices (BMPs) during the construction phase, the project owner shall implement a construction emissions control plan that has been reviewed and approved by the Director or Director's designee of the City of Santa Clara Community Development Department prior to the issuance of any grading or building permits, whichever occurs earliest. These BMPs are incorporated into the design of the project and will include:

- Water all exposed areas (e.g., parking areas, graded areas, unpaved access roads) twice a day.
- Maintain a minimum soil moisture of 12% in exposed areas by maintaining proper watering frequency.
- Cover all haul trucks carrying sand, soil, or other loose material.
- Suspend excavation, grading, and/or demolition activities when average wind speed exceeds 20 miles per hour.
- Pave all roadways, driveways, and sidewalks as soon as possible. Lay building pads as soon as grading is completed, unless seeding or soil binders are used.
- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction with a maximum 50 percent air porosity.
- Use a power vacuum to sweep and remove any mud or dirt-track next to public streets if visible soil material is carried onto the streets.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- Minimize idling time for all engines by shutting engines when not in use or limiting idling time to a maximum of five minutes. Provide clear signage for construction workers at all access points.
- Properly tune and maintain construction equipment in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and name of the person to contact regarding dust complaints and the BAAQMD telephone number. The contact person shall implement corrective measures, as needed, within 48 hours, and the BAAQMD shall be informed of any legitimate complaints received to verify compliance with applicable regulations. Limit simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
- Minimize idling time of diesel-powered construction vehicles to two minutes.

- As a condition of contract, require all on-road heavy-duty trucks to be zero emissions or meet the most stringent emissions standard, such as model year (MY) 2024 to 2026, as available. Use grid power for construction activities whenever possible; if grid power is not available, use alternative power such as battery storage, hydrogen fuel cells, or renewable fuels. If no other options are available, use Final Tier 4 diesel generators.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- All off-road equipment greater than 25 horsepower (hp) shall have engines that meet or exceed Tier 4 final off-road emission standards. Use of zero-emission and hybrid-powered equipment is encouraged.

4.3.5 References

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4.4 Biological Resources

This section describes the environmental setting and regulatory background and discusses impacts associated with the construction and operation of the project with respect to biological resources that occur in the project area.

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

Environmental checklist established by CEQA Guidelines, Appendix G.

4.4.1 Environmental Setting

Existing Habitat

The proposed project would occupy a site encompassing 5.12 acres located at 2805 Bowers Avenue in the city of Santa Clara, Assessor Parcel Number 216-28-063. The project site is located at the eastern side of Bowers Avenue, south of Walsh Avenue and north of the Union Pacific Railroad and is located within the San Jose West United States Geological Survey topographic quadrangle map. The project area has a City of Santa

Clara 2010-2035 General Plan (General Plan) land use designation of High Intensity Office/ Research and Development (R&D) and is zoned Light Industrial by the City of Santa Clara (City). The project site was used historically for agricultural purposes until it was commercially developed in 1975 and used mostly as office space (Property Shark 2023).

The project site is currently developed with an approximately 55,000 square foot two-story office building, driveway, parking lot, picnic tables and grass area, a basketball hoop, landscaping, and urban trees. The project site is generally bound to the north by an existing one-story office building, to the east by a material testing laboratory and one-story office building, to the south by an existing Silicon Valley Power (SVP) substation (Uranium Substation), and to the west by Bowers Avenue. Parcels near the project site consist primarily of commercial and industrial land uses to the north, east and west, and residential uses to the southeast. Land uses to the west include the Central Expressway approximately 600 feet north of the project site (Figure 3-3). The San Jose Mineta International Airport (formerly Norman Y. Mineta San José International Airport) is located approximately 1.8 miles east of the site. The nearest open space, Bracher Park, is approximately 0.1 mile south of the project site. Bracher Park is a relatively small park covering less than 3.5 acres and surrounded on all sides by developed properties (residential, schools, businesses, railroad, etc.).

The project site is developed and does not support native vegetation communities. Habitat on the project site is restricted to urban landscaping and a mix of native and non-native ornamental trees. These trees and other ornamental landscaping are present along Walsh Avenue to the northeast, along the remaining property boundaries, and throughout the parking and outdoor areas of the existing office building and warehouse. Habitat for pollinator species is limited due to the developed character of the site and surrounding areas.

The project site provides suitable habitat for nesting and foraging birds and other urban adapted species of wildlife. Species detected during the biological site visit (**Appendix C**) included Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), house finch (*Haemorhous mexicanus*), California towhee (*Melozone crissalis*), black phoebe (*Sayornis nigricans*), Eastern gray squirrel (*Sciurus carolinensis*), and lesser goldfinch (*Spinus psaltria*).

No small mammal burrows were observed on site during the site visit by the CEC consultant (**Appendix C**). Common wildlife, such as racoons (*Procyon lotor*), Virginia opossums (*Didelphis virginiana*), house mouse (*Mus musculus*), and Norway or brown rats (*Rattus norvegicus*) often occur in developed areas and may forage on the site in landscaped areas. Although bats were not detected, the site supports potential roosting habitat in the existing building, specifically in the roof tile cavities and other suitable crevasses, and in some of the larger mature trees. Staining was observed underneath the

tile roofing, though it is unknown whether this is a result of urban water runoff or roosting bats. No other signs of bats were identified during the site visit (**Appendix C**).

Special Status Species and Sensitive Habitats

Special-status species are plant and wildlife species that have been afforded special recognition by federal, state, or local resource agencies or organizations. The site does not contain natural community vegetation alliances as described in A Manual of California Vegetation (Sawyer et al., 2009) or listed on the California Department of Fish and Wildlife (CDFW) California Natural Community List (CDFW 2022).

No special status plants or wildlife species were detected by the CEC consultant during the site visit in December 2022 (**Appendix C**). Mature trees in the project area could provide potential habitat for Cooper's hawk (*Accipiter cooperii*), a CDFW Watch List (WL) Species. In addition, existing trees and cavities within the existing building provide marginal habitat for purple martin (*Progne subis*) and Townsend's big-eared bat (*Corynorhinus townsendii*), both CDFW Species of Special Concern (SSC).

During the site visit conducted in December 2022, no wetlands or potentially jurisdictional aquatic features such as natural drainages, seeps, or other waterways were detected. Storm water from the site flows into an existing storm water conveyance system. The nearest natural jurisdictional feature is San Tomas Aquinas Creek, which occurs approximately 0.5 mile to the east. Saratoga Creek, a tributary to San Tomas Aquinas Creek, is approximately 0.7 mile southeast of the project site. San Tomas Aquinas Creek feeds into the Guadalupe and Alviso Sloughs approximately 3.5 miles north of the project site. The southern boundary of the Don Edwards San Francisco Bay National Wildlife Refuge occurs approximately 3.5 miles north of the project site (GEP 2022).

There is no designated or proposed critical habitat for federally listed species or other natural or sensitive habitats in the project area or vicinity (USFWS 2023a).

Landscape Trees

Mature trees and other ornamental landscaping are present throughout the property, including the parking and outdoor areas of the existing office building. A certified arborist conducted a survey and provided an inventory report of the trees on the project site (GI Partners 2022a). There are 61 existing trees, including 3 in poor health. Refer to the Arborist Report included as Appendix B of the BBGF SPPE Application. (GI Partners 2022a) Of these 61 trees, two species are considered protected under General Plan, Policy 5.10.1-P4, specifically olive (*Olea europaea*) and coast redwood (*Sequoia sempervirens*). Several trees equal or greater than 36 inches circumference protected under General Plan Policy 5.10.1-P4 occur on the property. One species is protected under City Code 12.35-080, specifically coast redwood. Several other trees equal or greater than 38 inches in diameter, protected under City Code 12.35-080, occur on the property.

Regulatory Background

Federal

Endangered Species Act (16 U.S.C., § 1530 et seq., and 50 C.F.R., part 17.1 et seq.). The Endangered Species Act (ESA) designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. Its purpose is to protect and recover imperiled species and the ecosystems for which they depend. It is administered by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The USFWS is responsible for terrestrial and freshwater organisms while NMFS is responsible for marine wildlife such as whales and anadromous fish (such as salmon). Species may be listed as endangered or threatened. All species of plants and animals, except pest insects, are eligible for listing. Species are defined to include subspecies, varieties, and for vertebrates, distinct population segments. The ESA protects endangered and threatened species and their habitats by prohibiting the "take" of listed animals and the interstate or international trade in listed plants and animals, including their parts and products, except under federal permit. "Take" is broadly defined in ESA to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct" (16 U.S.C., §1532(19)). Take can also include significant habitat modification or degradation that directly results in death or injury to a listed wildlife species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 C.F.R., §17.3). Take of federally listed species as defined in the ESA is prohibited without incidental take authorization, which may be obtained through Section 7 consultation (between federal agencies) or a Section 10 Habitat Conservation Plan. The administering agencies are the USFWS, National Oceanic Atmospheric Administration (NOAA), and NMFS.

The Bald and Golden Eagle Protection Act (16 U.S.C. § 668—668c). This Act—enforced through regulations written by the USFWS—prohibits the "taking" of bald and golden eagles, including their parts, nests, or eggs. To take is defined as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb" any bald or golden eagle, whether "alive or dead...unless authorized by permit". The administering agency is USFWS.

Migratory Bird Treaty Act (16 U.S.C., §§ 703—711). The Migratory Bird Treaty Act (MBTA) makes it illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid federal permit. The USFWS has authority and responsibility for enforcing the MBTA. The administering agency is USFWS.

Clean Water Act Sections 401 and 404 (33 U.S.C., §§ 1251—1376). The Clean Water Act (CWA) requires the permitting and monitoring of all discharges to surface water bodies. Section 404 (33 U.S.C., § 1344) requires a permit from the United States Army Corps of Engineers (USACE) for a discharge from dredged or fill materials into a water of

the United States, including wetlands. Section 401 (33 U.S.C., § 1341) requires a permit from the regional water quality control board for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and federal water quality standards. The administering agency is the U.S. Army Corps of Engineers (Section 404) and the State or Regional Water Quality Control Board (Section 401).

State

California Endangered Species Act (Fish and Game Code, §§ 2050—2098). The California Endangered Species Act (CESA) of 1984 states that all native species of fish, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected and preserved. CESA prohibits the take of any species of wildlife designated by the California Fish and Game Commission as endangered, threatened, or candidate species. The CDFW may authorize the take of any such species if certain conditions are met. These criteria are listed in Title 14 of the California Code of Regulations, Section 783.4 subdivisions (a) and (b). For purposes of CESA "take" means to hunt, pursue, catch, capture, or kill (Fish and G. Code, § 86). The administering agency is CDFW.

Fully Protected Species (Fish and Game Code, §§ 3511, 4700, 5050, and 5515). These sections designate certain species as fully protected and prohibit the take of such species or their habitat unless for scientific purposes (see also Cal. Code Regs., tit. 14, §670.7). The incidental take of fully protected species may also be authorized in an approved natural community conservation plan (Fish and Game Code, § 2835). The administering agency is CDFW.

California Fish and Game Code The following sections of the Fish and Game Code designate protections for birds and/or their nests or eggs. The administering agency is CDFW.

- Section 3503: This section makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.
- Section 3503.5: This section makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes and Strigiformes or to take, possess, or destroy the nest or eggs of any such bird.
- Section 3513: This section protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds.
- Section 3800: All birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds are nongame birds. It is unlawful to take any nongame bird except as provided in this code or in accordance with

regulations of the commission or, when relating to mining operations, a mitigation plan approved by the department.

Native Plant Protection (Fish and Game Code, § 1900 et seq.). The Native Plant Protection Act was enacted in 1977 and designates state rare and endangered plants and provides specific protection measures for identified populations. Those laws prohibit the take of endangered or rare native plants but include some exceptions for agricultural and nursery operations; for emergencies; after properly notifying CDFW, for vegetation removal from canals, roads, and other sites; due to changes in land use; and in certain other situations. The administering agency is CDFW.

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

Local

City of Santa Clara 2010 – 2035 General Plan. Goals and policies specific to the City's General Plan to protect and preserve the city's natural habitat and wildlife are described in Chapter 5 Goals and Policies, Section 10 Environmental Quality. Those policies that are important with respect to the project are as follows:

- 5.3.1-P10 Provide opportunities for increased landscaping and trees in the community, including requirements for new development to provide street trees and a minimum 2:1 on- or off-site replacement for trees removed as part of the proposal to help increase the urban forest and minimize the heat island effect.
- 5.10.1-P1 Require environmental review prior to approval of any development with the potential to degrade the habitat of any threatened or endangered species.
- 5.10.1-P2 Work with Santa Clara Valley Water District and require that new development follow the "Guidelines" and Standards for Lands Near Streams to protect streams and riparian habitats.
- 5.10.1-P3 Require preservation of all City-designated heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan.
- 5.10.1-P4 Protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches in circumference measured from 48 inches above-grade on private and public property as well as in the public right-of- way.
- 5.10.1-P5 Encourage enhancement of land adjacent to creeks in order to foster the reinstatement of natural riparian corridors where possible.

- 5.10.1-P11 Require use of native plants and wildlife-compatible non-native plants, when feasible, for landscaping on city property.
- 5.10.1-P12 Encourage property owners and landscapers to use native plants and wildlife-compatible nonnative plants, when feasible.
- 5.10.5-P19 Limit development activities within riparian corridors to those necessary for improvement or maintenance of stream flow.

Santa Clara City Codes and Ordinances. Santa Clara City Code (City Code), sections 12.35.080through 12.35.100 restricts the removal, alteration, or damage of healthy trees on private property without a permit, including trees with a diameter of 38 inches or more measured at 54 inches above natural grade, and all trees with a diameter of 12 inches or more when measured at 54 inches above natural grade of the following species: California buckeye (*Aesculus californica*), big leaf maple (*Acer macrophyllum*), deodar cedar (*Cedrus deodara*), blue Atlas cedar (*Cedrus atlantica* "Glauca"), camphor tree (*Cinnamomum camphora*), western sycamore (*Platanus racemosa)*, native oak trees (*Quercus* spp.), coast redwood , and California bay laurel (*Umbellularia californica*). The City's Community Design Guidelines require that mature trees removed or proposed for removal be replaced on-site, at a minimum, with a 24- or 36-inch box. Other standards may apply in cases where particular planting requirements must be met. All work shall be done in accordance with ANSI A300 standards, developed as voluntary industry consensus standards by the Tree Care Industry Association, and follow all tree care best management practices published by International Society of Arboriculture (ISA) necessary to protect the vitality of the tree.

City Code, section 12.35.090 details the requirements of the tree removal application and process including tree replacement ratios. When site development/redevelopment is occurring, a tree survey conducted by an arborist who has been certified by ISA shall be submitted as part of the required application materials. The report shall explain why the tree(s) cannot be relocated.

The City's Department of Community Development shall have the ability to require the reasonable alteration of a proposed building in order to retain trees, to require relocation (on or off site) of protected trees which the applicant proposes to remove. Replanting of trees shall be included as part of the landscaping plan for the proposed project. Replacement trees are required to be planted at replacement ratios specified in City Code, section 12.35.090(c)(7). The plan shall include tree protection measures that will occur during and after construction, and specifically identify the tree protection zone. City trees and protected trees shall be protected by use of best management practices (BMPs), design conditions, and measures listed in City Code, section 12.35.100 (d-f).

Architectural Committee Policies - Community Design Guidelines. The City's Architectural Committee maintains a Community Design Guideline used for architectural review in order to "provide a manual of consistent development standards in the interest of continued maintenance and enhancement of the high-quality living and working

environment of the City of Santa Clara." The manual includes the following guidelines relevant to the project:

Landscaping & Minimum Planting Sizes

The following minimum plant sizes shall apply when landscaping is required as a condition of approval or in any planting area within the public right-of-way. Other standards may apply in cases where particular planting requirements must be met.

Trees:

- Minimum fifteen (15) gallon on private property
- Minimum fifteen (15) gallon street tree
- Minimum twenty-four (24) or thirty-six (36) inch box to replace a mature tree which has been or is proposed to be removed.

For additional information on lighting, materials, glint, and glare, please refer to **Section 4.1 Aesthetics**.

4.4.2 Environmental Impacts

This section incorporates the results of the biological surveys performed on the site and the results of queries from the USFWS Information for Planning and Consultation (IPaC) species list, California Natural Diversity Database (CNDDB) RareFind 5, California Native Plant Society (CNPS) Rare Plant Inventory, California Consortium of Herbaria, iNaturalist, eBird, and species listed in the City of Santa Clara 2010-2035 General Plan. This section also includes information from the site visit report prepared by the CEC consultant (**Appendix C**) and the Certified Arborist Report included in the SPPE Application (GI Partners 2022a).

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

Construction

Less Than Significant with Mitigation Incorporated. The project site is developed and does not support habitat for sensitive or listed plant species. The site does not contain natural community vegetation alliances as described in A Manual of California Vegetation (Sawyer et al., 2009) or listed on the CDFW California Natural Community List (CDFW 2022).

Plants

A literature review of the project site and adjoining area, including a nine-quad search of the CNDDB, IPaC, and CNPS, determined there are 41 special-status plant species that

occur regionally within the greater Santa Clara area surrounding the project site (CNDDB 2023a, CNDDB 2023b, USFWS 2023b, CNPS 2023). However, all of the 41 special-status plant species that occur regionally are considered absent and not likely to occur within the site due to a lack of suitable habitat (**Appendix C**). Based on the location, existing habitat, and conditions (developed, paved, landscaped, etc.) of the site, the implementation of the project will not have direct or indirect impacts to special status plants in the development footprint. Potential impacts from the operation of the facility, including a discussion of nitrogen deposition, are described below.

Wildlife

The project site is in an urban setting and does not provide habitat for most special-status wildlife species. Most rare, threatened, endangered, and sensitive wildlife species are not expected to occur due to a lack of suitable habitat. No special-status wildlife species were identified in the area during the site visit (**Appendix C**). No federally or state listed or candidate species are expected to occur or to be impacted by the project.

Special-status species most likely to be impacted by the development of the project include nesting birds and bats. Several species of special status birds covered by the MBTA and Fish and Game Code sections 3503, 3503.5, and 2800; and CDFW SSC could occur as transients or periodic breeders. There is some potential for special status bats to occur.

Nesting Birds. Mature trees could provide potential foraging habitat for Cooper's hawk. The potential for nesting on the site is low due to the lack of dense forests or nearby streams. Other special-status raptors are not likely to occur based on lack of specific habitat requirements, such as Swainson's hawk (*Buteo swainsoni*; ST), which require more open habitats and grasslands often near agricultural areas for foraging, or American peregrine falcon *(Falco peregrinus anatum*; FP), which often utilize high-rise buildings, bridges, or cliffs for nesting. There are numerous nearby records for burrowing owl (*Athene cunicularia)* a CDFW SSC and protected under Fish and Game Code surrounding the project site. However, this species is not expected to occur due to a lack of suitable habitat, including a lack of herbaceous ground cover, foraging habitat, and absence of burrows or burrow surrogates. Because of the location of the project, it is unlikely that burrowing owls would occupy the site should cavities or burrows become established in the future.

Purple martin has been observed within 2 miles of the proposed project in open barren areas at the San Jose Mineta International Airport. This species is typically associated with a high concentration of nesting cavities. Though the site does not support a high concentration of nesting cavities, it does support some cavities and nesting opportunities on the buildings. Townsend's big-eared bat is known to use human-made structures for roosting, including buildings, but are extremely sensitive to disturbance of roosting sites (CDFW 2023) and are considered to have a low potential to occur because of ongoing levels of human disturbance. Other non-sensitive bats could roost on or in the existing building, within the Spanish-tile roof crevices, or within cavities found in olive trees.

Staining was observed on the overhanging eaves underneath the roof tiles, though it is unknown whether this is a result of water staining or roosting bats. Small cavities within olive trees number 34, 36 and 40 could provide moderate habitat for roosting bats. Cavities or crevices were not observed within any other trees at the project site (**Appendix C**).

Nesting Birds. The project area has the potential to support nesting for a suite of common birds which are protected by existing federal, state, and local laws, policies, and regulations as previously described above. In addition, there are 20 bird species listed by the USFWS as Birds of Conservation Concern (BCC) throughout their range in the continental United States of America and some in Alaska, that may occur within the project vicinity (USFWS 2023b). These species were identified as species in need of conservation attention and include: Allen's hummingbird (*Selasphorus sasin*), Belding's savannah sparrow (*Passerculus sandwichensis Beldingi*), black oystercatcher (*Haematopus bachmani*), black tern (*Chlidonias niger*), black turnstone (*Arenaria melanocephala*), Bullock's oriole (*Icterus bullockii*), California gull (*Larus californicus*), California thrasher (*Toxostoma redivivum*), Clark's grebe (*Aechmophorus clarkia*), common yellowthroat (*Geothlypis trichas sinuosa*), Lawrence's goldfinch (*Carduelis lawrencei*), marbled godwit (*Limosa fedoa*), oak titmouse (*Baeolophus inornatus*), olive-sided flycatcher (*Contopus cooperi*), short-billed dowitcher (*Limnodromus griseus*), western grebe (*Aechmophorus occidentalis*), willet (*Tringa semipalmata*), wrentit (*Chamaea fasciata*), and yellow-billed magpie (*Pica nuttalli*). Most of these species would only be present as a migrant and are not expected to nest at the site based on existing habitat conditions. The BCC-classified species that may nest on site include Allen's hummingbird and potentially yellow-billed magpie.

Removal of the existing buildings and trees could result in direct impacts to nesting birds and raptors if tree removal occurs during the nesting season (generally defined as February 15 to August 15). Other project activities, including demolition and construction could also result in disturbance of nesting birds on or near the project site that could result in nest abandonment by the adults and mortality of chicks and eggs. Destruction of active bird nests, nest abandonment, and/or loss of reproductive effort caused by disturbance are considered "take" by the CDFW and would be considered a significant impact.

The applicant proposed a measure to reduce potential impacts to nesting birds (PD BIO-1.1). The measure included conducting a pre-construction survey no more than 14 days prior to construction during the early part of the breeding season (February through April), and no more than 30 days prior to construction during the late part of the breeding season (May through August). Staff evaluated this measure and determined that minor revisions were necessary to reduce potential impacts to nesting birds. Some common bird species known from the project area can construct a nest and place eggs well within the 14-day survey window. In some instances, nests have been detected within 2-3 days during the height of the nesting season (February 1st and June 30th). To reduce potential impacts to nesting birds during the construction of the facility, pre-construction surveys

should be conducted no more than 7 days prior to initiation of demolition or construction activities between February 1st and June 30th, and no more than 14 days prior to initiation of demolition or construction activities between July 1st and August 31st. Delineation of appropriate buffers to protect the species, at the discretion of the qualified biologist, was added for clarity. Staff proposes mitigation measure **BIO-1,** which requires project demolition and construction activities, including tree removal, to be scheduled outside the nesting period, when possible, and to conduct nesting bird surveys prior to initiation of any of these activities during the nesting period. If active nests are detected, buffers shall be established, in consultation with the CDFW, to avoid disturbance of nesting birds. In addition, a survey report that would include recommended buffer zones would be submitted to the City's Director of Community Development prior to issuance of grading and/or building permits from the City.

Bats. Removal of the existing office building and trees could result in direct impacts to active roosts of protected or common bats, if present. Although not detected, the project area provides marginal roosting habitat for Townsend's big-eared bat and other roosting bats. Townsend's big-eared bat occurs in a wide variety of habitats often roosting in the open from walls and ceilings, but it is highly sensitive to human activity (CDFW 2023). Bats could occur within existing trees or under roof tiles of the existing office building. The destruction of active bat roosts and maternity colonies or direct impacts to individual bats would be considered a significant impact.

Staff proposes mitigation measure **BIO-2** requiring bat clearance surveys be conducted prior to demolition of the existing buildings or removal of trees and a development of a Bat Mitigation and Monitoring Plan (Plan). The Plan would provide information on the methods to detect and exclude bats, roost removal procedures, and compensatory mitigation methods (i.e., the placement of bat boxes) should permanent impacts to roosts be required. The Plan would be submitted to the City's Community Development Department for approval and the CDFW for review and comment. Preconstruction surveys for bats would include trees and structures within the project footprint, as well as a 50-foot buffer surrounding the project. Because the project site is surrounded on all sides by privately developed parcels, well-traveled roads, and associated anthropogenic activities, noise and visual obstructions caused by construction are unlikely to exceed ambient conditions at a distance greater than 50 feet for a prolonged period of time and would be buffered by the surrounding urban setting.

Implementation of **BIO-1** and **BIO-2** would reduce potential impacts to protected wildlife species, including birds, such as raptors and other migratory birds, and bats to less than significant. Therefore, project construction would not have a substantial adverse effect on special status wildlife species.

Operation

Less Than Significant. Sensitive plant species or protected habitats do not occur on or adjacent to the project and would not be impacted by routine operation and maintenance activities. Operation and maintenance activities, such as landscape and irrigation

maintenance, are expected to result in the same level of human presence and disturbance as current landscape and irrigation maintenance activities. Operational impacts that could potentially affect biological resources are indirect impacts resulting from project-related nitrogen deposition on nitrogen-sensitive habitats.

Nitrogen Emission and Deposition Impacts. Operation of the project's 32 3-megawatt emergency backup diesel generators would result in emissions of oxides of nitrogen (NOx). Nitrogen deposition is the input of NOx and ammonia (NH^3) "atmospherically derived pollutants", primarily nitric acid (HNO^3), from the atmosphere to the biosphere. The sources of these pollutants are primarily vehicle and industrial emissions, including power generation. Increased nitrogen deposition in nitrogen-poor habitat allows the proliferation of non-native species, which crowds out native species (Fenn et al. 2003; Weiss 2006). Threats to sensitive species habitat from noxious weeds are exacerbated by nitrogen fertilization, and the deposition of additional nitrogen in an already stressed ecosystem would be a potentially significant indirect impact.

The CEC staff considered protected areas and designated critical habitat within a 6-mile radius around the project in the analysis of nitrogen deposition from the project. It has been the CEC staff's experience that, by the time the plume from a conventional power plant has traveled this distance, in-plume concentrations become indistinguishable from background concentrations. In addition, for a data center, the plume(s) often touches down immediately adjacent to the site since the stacks are low, depending on the terrain and other factors. Further, the CEC staff considered habitat modification to protected areas and designated critical habitat to be a potentially significant effect if these communities were known to be sensitive to nitrogen deposition. There is no designated or proposed critical habitat for federally listed species within 6 miles of the project area.

Northern coastal salt marsh habitat is located in the Guadalupe Slough near the San Francisco Bay Trail, approximately 4 miles northwest of the project site. This is the only protected area within 6 miles of the project known to be sensitive to nitrogen deposition. This habitat occurs along the margins of the San Francisco Bay in areas that are sheltered from excessive wave action (Mayer, K.E. and W.F. Laudenslayer, Jr. 1988). Northern coastal salt marsh is also considered a sensitive natural community by CDFW and included in the CNDDB (CNDDB 2023a). Several special-status species are known to occur in this area of northern coastal salt marsh habitat, including California Ridgway's rail (*Rallus obsoletus*; FE, SE, FP), salt marsh common yellowthroat (*Geothlypis trichas sinuosa*; SSC), Alameda song sparrow (*Melospiza melodia pusillula*; BCC, SSC), salt marsh wandering shrew (*Sorex vagrans halicoetes*; SSC), and salt marsh harvest mouse (*Reithrodontomysr aviventris*; FE, SE) (CNDDB 2023b).

One approach for quantifying nitrogen deposition is through critical load, which is defined as the input of a pollutant below which no detrimental ecological effects occur over the long-term. Salt marsh habitat tends to have a higher critical load than other ecosystems due to its open nutrient cycles that are less affected by atmospheric deposition than other nitrogen loading sources (Pardo et. al. 2011, pg. 3071). Critical load for early successional

salt marsh has been estimated to be in the range of 30-40 kilograms nitrogen per hectare per year (kg N/ha/yr) (Bobbink et. al. 2010, pg. 21-22), and 50-100 kg N/ha/yr for intertidal wetlands and 63-400 kg N/ha/yr for intertidal salt marshes (Pardo et. al. 2011, pg. 3059). The CEC staff used the conservative estimate of 30-40 kg N/ha/yr as the critical load for northern coastal salt marsh.

Impacts could potentially occur if the emissions from the project in conjunction with baseline nitrogen deposition levels exceeded the critical load for the community. For a baseline nitrogen deposition estimate, the CEC staff used the Community Multiscale Air Quality (CMAQ) modeling system, which provides estimates of ozone, particulates, toxics, and acid deposition. The CEC staff considered the most recent CMAQ-predicted value of 11.4 kg N/ha/yr from 2019 at northern coastal salt marsh habitat as the best available data to determine baseline nitrogen deposition (U.S. EPA 2023b). Potential nitrogen deposition impacts from readiness testing and maintenance of the emergency standby generators within a 2-mile radius of the project site were evaluated based on modeling for nearby projects of similar size and specifications such as the CA3 Backup Generating Facility (21-SPPE-01), which borders the Bowers project to the south (DayZen 2022). The CEC staff used the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) (U.S. EPA 2023a) to establish nitrogen deposition values for these projects.

Although the available modeling grid only extended 2 miles, it was adequate for the CEC staff to estimate contributions at the salt marsh habitat within 6 miles of the project site. Based on conservative modeling using AERMOD, the project's estimated contributions to existing nitrogen deposition would be between 0.02 and 0.20 kg N/ha/yr at 2 miles from the project site. In addition, the concentrations would continue to decrease by the time the plume reaches the northern coastal salt marsh habitat. The project's estimated contribution (between 0.02 and 0.20 kg N/ha/yr) when added to the baseline nitrogen deposition value (11.4 kg N/ha/yr) at northern coastal salt marsh would be substantially below the critical load (30-40 kg N/ha/yr) for this habitat type. Operation of the project would not result in a substantial adverse effect from nitrogen deposition, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status. Therefore, this impact would be less than significant.

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, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction

No Impact. The project site is developed and does not support riparian habitat or other sensitive natural communities. The nearest area supporting riparian habitat is San Tomas Aquinas Creek, which occurs approximately 0.4 mile to the east. This area is well over the standard riparian setback to protect streams and riparian habitats stipulated in the

City of Santa Clara General Plan Condition 5.10.1-P2 (SCC Planning Office GIS Data; SCC 2023).

On-site adherence to discharge requirements for the control of solids and pollutants leaving the construction area, as required in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) which conforms to the National Pollution Discharge Elimination System (NPDES) Permit, would ensure that impacts to natural waterways in riparian habitat are avoided. The regional plan is the basis for the NPDES permit issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB). This includes a Storm Water Pollution Prevention Plan (SWPPP) and storm water quality best management practices such as directing runoff into bioswales and replacing a portion of the existing paved parking area with pervious pavement. Refer to **Section 4.10 Hydrology and Water Quality** for additional information. With implementation of the above listed permit and programs, the project would not result in direct or indirect impacts to riparian habitat or any other sensitive natural community.

Operation

Less Than Significant Impact. No direct impacts would occur during the operation of the project. The implementation of the SCVURPPP (**Section 4.10 Hydrology and Water Quality**) requires Low Impact Development-based storm water treatment controls to treat post-construction storm water runoff intended to maintain or restore the site's natural hydrologic functions, maximizing opportunities for infiltration and evapotranspiration, and using storm water as a resource. It also requires proper installation, operation, and maintenance of storm water treatment measures. Impacts from operation and maintenance of the project would be less than those anticipated during construction for storm water.

As described above in CEQA environmental criterion "a" for project operation, the CEC staff also evaluated the potential for indirect impacts to occur to sensitive vegetation communities located in adjacent areas from nitrogen deposition. Northern coastal salt marsh is the only sensitive natural community within 6 miles of the project known to be sensitive to nitrogen deposition. As stated above, salt marsh habitat has a high tolerance for nitrogen input because of its open nutrient cycle (Pardo et. al. 2011, pg 3071) and thus higher critical load in the conservative range of 30-40 kg N/ha/yr. Current background nitrogen deposition at the northern coastal salt marsh for 2019 is estimated to be 11.4 kg N/ha/yr (CMAQ 2019). Since the nitrogen deposition attributed to the project combined with the background nitrogen would be considerably less than the lowermost critical load of 30-40 kg N/ha/yr for salt marsh, impacts from nitrogen deposition would be less than significant for this sensitive natural community.

c. Would the project 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?

Construction and Operation

Less Than Significant. The project site does not support any state or federally protected wetlands, vernal pools, or other jurisdictional features. The USFWS National Wetland Inventory (NWI) Wetlands Mapper and CNDDB/BIOS results indicate the presence of a creek (labeled Saratoga Creek on the BIOS map) that traverses the site from north to south along the eastern side of the existing building. However, based on a review of other existing data and updated imagery, and verified during the site visit by the CEC consultant, there is no longer a creek or riparian corridor within the project area (**Appendix C,** U.S. EPA 2023d, USGS 2023). Please refer to **Section 4.5 Cultural and Tribal Resources** for additional information on Saratoga Creek. The nearest downstream waterways are San Tomas Aquinas Creek and Calabazas Creek (U.S. EPA 2023c). Therefore, the project would not result in direct impacts to any state or federally protected wetlands, including marshes, vernal pools, or coastal communities.

Direct and indirect impacts from storm water or pollutant runoff (discussed further in **Section 4.10 Hydrology and Water Quality**) would be controlled via a local NPDES General Permit (SCVURPPP) for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) administered by the RWQCB. Prior to any ground-disturbing construction activity, the applicant must comply with the Construction General Permit, which includes preparation of a construction SWPPP. With the implementation of permit regulations, direct and indirect impacts would be less than significant.

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 wildlife nursery sites?

Construction and Operation

No Impact. The project would not occur in a terrestrial or aquatic wildlife movement corridor. It would have no impact on the movement of native resident or migratory fish or wildlife species. The San Tomas Aquinas Creek corridor, located approximately 2 miles east of the project, is the closest area where movement or migration of native resident wildlife species would occur. The second and third areas of wildlife movement are within the Guadalupe River corridor approximately 2.5 miles east, which feeds into the southernmost area of Guadalupe Slough. The slough occurs approximately 3.5 miles north of the project site. Guadalupe Slough connects with multiple creeks and becomes an estuary of the San Francisco Bay. There are no known wildlife nursery sites, such as

a rookery, fawning area, or fish spawning habitat, in the project area (U.S. EPA 2023c; USFWS 2023a; USFWS 2023b). Nor are there any naturally occurring corridors from the project site to these resources (GEP 2022). Impacts to the San Tomas Aquinas Creek corridor, from glint and glare (lighting) are unlikely due to the distance from the project site. **Section 4.1 Aesthetics** concludes that no impacts would occur since construction and operation of the project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Therefore, there would be no impact during construction or operation of the project.

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

Construction and Operation

Less Than Significant. There are a total of 61 trees on the project site. The applicant proposes to remove 48 trees and install new landscaping including tree plantings at ratios required by the City of Santa Clara's Tree Ordinances (City Code, § 12.35.090(C)(7)). Of these 48 trees, there are 19 trees proposed for removal which are protected under City Code, section 12.35.080 and General Plan Policy 5.10.1-P4. Trees covered by City Code, section 12.35.080, include 12 coast redwood, 1 evergreen ash *(Fraxinus uhdei*)*,* 1 crape myrtle (*Lagerstroemia indica*)*,* and 1 red ironbank (*Eucalyptus sideroxylon*). The remaining 4 trees are olive which are covered by General Plan Policy 5.10.1-P4. These trees, in addition to the remaining 29 trees scheduled for removal, are also considered part of the urban forest under General Plan Policy 5.3.1-P10, which mandates replacement ratios, including the trees determined to be in 'poor' health' (CEC 2023f). No heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan are present (Santa Clara 2010).

The applicant proposes to mitigate for the loss of 48 trees by planting 5 trees that would be 36" box size and 86 trees that would be 36" or 48" box size on the project site. The project would plant 48" box size trees instead of 24" box size to have the onsite benefit of landscaping by upsizing the replacement trees (CEC 2023f). At this time, the City would not collect any in-lieu fees or approve any replacement trees to be planted off-site as there is currently no mechanism to implement this process (CEC 2023f). The final number of trees required to be planted on site by the City would be determined upon approval of the project's Landscape Plan by the City's Director of Community Development during Architectural Review.

The remaining trees to be retained on the project site would require fencing to establish tree-protection zones to ensure the trees are not damaged during demolition or construction. The applicant proposed measures to reduce potential impacts to existing trees, including establishing barricades and enforcing standards for root pruning, pruning, fertilization and mulching (PD BIO-2.1 through PD BIO-2.5). Staff reviewed the applicant's measures; however, the recommended measures included in the Certified Arborist

Report, prepared by HMH and included in the SPPE Application are more robust and comprehensive to protect existing trees. For example, the Certified Arborist Report included the required establishment of Tree Protection Zones (TPZs), measures to avoid impacts during grading, boring and trenching near tree roots, measures to avoid impacts during grading near trees, measures to take prior to cutting any tree limbs or roots, and measures for maintenance of trees onsite. The measures in the Certified Arborist Report are typically incorporated into the landscape plan with the addition of the City's Arborist Notes, Version R2012-08, as required by local General Plan policies and City Code (Santa Clara 2023). All required tree protection measures would be included in the project's Landscape Plan to be adopted during final Architectural Review, as part of the permit approval process by the City (CEC 2023f).

Therefore, construction and operation of the project would not have a substantial adverse effect on biological resources protected by local policies or ordinances and impacts would be less than significant.

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

Construction and Operation

No Impact. There are no approved habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans that would apply to the proposed project. The Santa Clara Valley Habitat Plan (SCVHA 2012) provides for the protection and recovery of resources for the majority of land in Santa Clara County, however the project is not within the permitting area of this plan. The footprint of the project site is outside the of the SCVHP coverage area and due to the scale of the project (<10 acres), it is not subject to the Urban Service Area exceptions. Therefore, there would be no impact during construction or operation of the project.

4.4.3 Mitigation Measures

BIO-1: Avoid and Minimize Impacts to Protected Bird Species

If initial demolition and construction activities, including grading and tree, shrub, or vegetation removal, are to occur during the breeding season February 1st to August 31st inclusive, a qualified biologist, approved by the City of Santa Clara, shall conduct pre-construction surveys for nesting protected birds onsite and within 250 feet (for raptors) of the site, where accessible. The survey shall occur no more than 7 days prior to the onset of ground disturbance if disturbances are to commence between February 1st and June 30th and no more than 14 days prior to the onset of ground disturbance between July 1st and August 31st. Additional follow-up surveys may be required if a period of construction inactivity exceeds two weeks in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation.

If a nesting protected bird is detected, an appropriate construction-free buffer (typically 250 feet for non-raptors to 500 feet for raptors) shall be established in consultation with the California Department of Fish and Wildlife (CDFW). The actual size of the buffer, which shall be determined by the project's qualified biologist, would depend on species, topography, and type of activity that would occur in the vicinity of the nest. The appropriate buffer zone will be marked in the field with exclusion fencing, within which no construction, tree removal, or vegetation clearing shall commence until the qualified biologist verifies that the nest(s) are no longer active. The project buffer would be monitored periodically by the project biologist to verify compliance. After the nest is completed, as determined by the biologist, the buffer would no longer be required. If an active bird nest is discovered during demolition or construction, then a buffer zone shall be established under the guidelines specified.

The applicant shall submit a report indicating the results of the survey and any designated buffer zones to the satisfaction of the City of Santa Clara's Director of Community Development prior to the issuance of permits for tree removal, demolition, or grading. The report(s) shall contain maps showing the location of all nests, species nesting, status of the nest (e.g., incubation of eggs, feeding of young, near fledging), and the buffer size around each nest (including reasoning behind any alterations to the initial buffer size). The report shall be provided within 10 days of completing a pre-construction nest survey.

BIO-2: Avoid and Minimize Impacts to Bat Species

If suitable roosting habitat for special-status bats will be affected by project construction (e.g., removal of buildings, removal of trees), a qualified wildlife biologist shall conduct surveys for special-status bats during the appropriate time of day to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days prior to beginning tree removal and/or demolition or ground disturbance. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (e.g., Anabat, etc.). Visual surveys shall include trees and structures within 50-feet of construction activities. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study and no further mitigation is required.

If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts.

If roosts or a maternity colony are determined to be present and must be removed, the bats shall be excluded from the roosting site before the tree or structure is removed. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter) or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young).

If roosts cannot be avoided or it is determined that construction activities may cause roost abandonment, such activities shall not commence until permanent, elevated bat houses have been installed outside of, but near, the construction area. Placement and height will be determined by a qualified wildlife biologist, but the height of bat house shall be at least 15 feet. Bat houses shall be multi-chambered and be purchased or constructed in accordance with California Department of Fish and Wildlife (CDFW) standards. The number of bat houses required shall be dependent upon the size and number of colonies found, but at least one bat house shall be installed for each pair of bats (if occurring individually) or of a sufficient number to accommodate each colony of bats to be relocated.

If bat roosts are detected, then a Bat Mitigation and Monitoring Plan (Plan) shall be prepared and implemented to mitigate for the loss of roosting habitat. The Plan shall include information pertaining to the species of bat and location of the roost, exclusion methods and roost removal procedures, compensatory mitigation for permanent impacts (including specific mitigation ratios and location of proposed mitigation as described in the above bullet) and monitoring to assess bat use of mitigation areas. This Plan shall be submitted to the City of Santa Clara and CDFW for review and approval prior to project activities that would disturb roosting bats.

4.4.4 References

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4.5 Cultural and Tribal Cultural Resources

This section describes the environmental setting and regulatory background and discusses the impacts associated with the construction and operation of the project with respect to cultural and tribal cultural resources.

CULTURAL AND TRIBAL CULTURAL RESOURCES Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
d. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
e. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

4.5.1 Environmental Setting

This section considers four broad classes of cultural resources: Native American archaeological, ethnographic, historic-period, and tribal cultural resources. The next four paragraphs briefly describe these classes of resources. Afterward, the Cultural and Tribal Cultural Resources section presents the environmental setting pertinent to these resources:

- *California Native American archaeology, ethnographic, and historic contexts*—generally describes who lived in the project vicinity, the timing of their occupation, and what uses they made of the area
- *Methods of analysis*—establishes what kinds of physical traces (cultural and tribal cultural resources) past peoples might have left in the project area, given the project vicinity's California Native American archaeological, ethnographic, and historic contexts
- *Results ensuing from those methods*—identifies the specific resources present or expected in the project area.
- *Regulatory setting*—presents the criteria for identifying *significant* cultural and tribal cultural resources under the California Environmental Quality Act (CEQA) and other applicable authorities, as well as criteria for identifying significant impacts on these resources.
- *Impacts*—identifies any impacts on cultural and tribal cultural resources, along with the severity of any such impacts
- *Mitigation measures*—proposes measures to avoid, minimize, rectify, reduce or eliminate, or compensate for any identified, significant impacts

Native American archaeological resources are those materials relating to Native American occupation and use of a particular environment. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American activity. In California, Native American occupation began more than 12,000 years ago and extended through the eighteenth century until the year 1769, when Europeans first colonized California.

Ethnographic resources are those materials important to the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, or Asian immigrants. They may include traditional resource collecting areas, ceremonial sites, topographic features, value-imbued landscapes, cemeteries, shrines, or neighborhoods and structures. Ethnographic resources are variations of natural resources and standard cultural resource types. They are subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes assigned cultural significance by traditional users. The decision to call resources "ethnographic" depends on whether associated peoples perceive them as traditionally meaningful to their identity as a group and the survival of their lifeways.

Historic-period resources are those materials, archaeological and architectural, usually but not necessarily associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. They may include archaeological deposits, sites, structures, trail and road corridors, artifacts, or other evidence of historic human activity. Under federal and state requirements, historic period cultural resources must be 50 years or older to be considered of potential historic importance. A resource less than 50 years of age may be historically significant if the resource is of exceptional

importance. The Office of Historic Preservation (OHP 1995, page 2) endorses recording and evaluating resources 45 years or older to accommodate a five-year lag in the planning process.

Tribal cultural resources are a category of historical resources introduced into CEQA by Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014). Tribal cultural resources are resources that are any of the following: sites, features, places, cultural landscapes, sacred places, or objects that are included in or determined eligible to the California Register of Historical Resources (CRHR) or are included on a local register of historical resources as defined in Public Resources Code, section 5020.1(k). Tribal cultural resources can be archaeological, ethnographic, or historic.

California Native American Archaeological Context

The archaeological record in the Santa Clara Valley began about 9,000 years before present (B.P., or before 1950) with the Metcalf Creek Aspect, the local expression of the Millingstone cultural pattern. Archaeological deposits dating to this time contain milling slabs and handstones, and large wide-stemmed and leaf-shaped projectile points. Native people during this period were mobile foragers and burials were typically flexed and placed beneath millingstone cairns. (Milliken et al. 2007, page 114.)

This Early Holocene culture extended until the beginning of the Early Period (circa (ca.) 5500 B.P.), which exhibits developments in groundstone technology (i.e., replacing millingstones with the mortar and pestle), less movement of entire communities, regional symbolic integration between cultural groups, and increased trade. Also referred to locally as the Sandhill Bluff Aspect, this cultural pattern lasted until ca. 2500 B.P., when the Lower Middle Period began with a "major disruption in symbolic integration systems" (Milliken et al. 2007, page 115.) Archaeological assemblages from the Lower Middle Period include more olive snail-shell saucer beads and circular abalone shell ornaments (and the disappearance of the rectangular shell beads), as well as bone tools and whistles.

The Upper Middle Period began ca. 1520 B.P. with a disruption of the olive snail-shell bead trade network, abandonment of some village sites, and changes in shell bead manufacture. Some South Bay burials from this period were extended rather than flexed burials, and grave goods were lacking. (Milliken et al. 2007, page 116.)

The Late Period began ca. 900 B.P., with groups increasingly intensifying the creation of wealth objects, as seen in burials. Smaller projectile points for use in the bow and arrow emerged during this period and some of the mortuary evidence suggests the introduction of cremation, at least among the wealthiest of individuals. (Milliken et al. 2007, page 117.)

Archaeological research in the project vicinity reveals a rich and lengthy archaeological record. Archaeologists have found numerous buried Native American sites throughout the lower Santa Clara Valley. Rapid development of the valley covered numerous archaeological sites in pavement or with structures (Busby et al. 1996a, pages 2–4;

Hylkema 1994, page 252; Parsons and KEMCO 1983, pages 18 and 35). Below the archaeological sites capped by the veneer of recent building, the Guadalupe River and smaller streams (Saratoga and San Tomas Aquino creeks) buried generations of Native American sites under layers of silt and clay. As a result, the surface archaeological record of the Santa Clara Valley represents only the last 2,000 years of human occupation. The remaining 7,000 years of native history lay anywhere from near surface up to 30 feet below the modern ground surface. (Busby et al. 1996a, pages 2–4; Busby et al. 1996b, page 2; Jones et al. 2007, page 130; Parsons and KEMCO 1983, pages 16, 25–26, 33; Ruby et al. 1992:9, 12, 17–19.)

Ethnographic Context

The Costanoans are the Native Americans who inhabited the Bay Area since time immemorial. The Costanoan designation refers to those who spoke one of eight separate but related languages (Shipley 1978, pages 84, 89). The Costanoan languages resemble Miwok and are part of the Yok-Utian language family of the Penutian stock (Golla 2007, pages 75–76). Tamyen (Santa Clara Costanoan) was spoken around the southern end of San Francisco Bay and the lower Santa Clara Valley (and was spoken by Costanoans in the project vicinity). (Milliken et al. 2007, Figure 8.1; Shipley 1978, pages 84 and 89.)

Each village was a separate and politically autonomous tribelet, with about 200 people living within each. Tribelets were the basic unit of political organization, with chiefs, either women or men, descended from their patrilineal relative. In the late 1700s, there were two tribelets near the proposed project site, San José Cupertino and Santa Clara; both are presumably Tamyen speakers. (Levy 1978, Figure 1.) Kroeber (1976, Figure 42) indicates that two settlements were located within a few miles of the project site on the Guadalupe River, Tamie-n near Santa Clara, and Ulis-tak farther north near the San Francisco Bay.

Like most other Native Americans in California, acorns were the staple food of the Costanoan people in the Santa Clara region. Other nuts such as buckeye, California laurel, and hazelnuts were also eaten. The Costanoans set controlled fires to promote the growth of the nuts and seeds upon which they relied. The primary mammals taken by the Costanoan included the black-tailed deer, elk, antelope, grizzly bear, mountain lion, sea lion, and whale. Waterfowl, salmon, steelhead, and lampreys were also important components of the Costanoan diet. (Levy 1978, page 491.)

Thatched, domed houses were the most common type of structure for the Costanoans. Sweathouses along the banks of rivers were also constructed, in addition to dance enclosures and assembly houses. (Levy 1978, page 492.)

Bodies were either buried or cremated on the day of death. The community either buried the deceased's property with the body or destroyed their property. (Kroeber 1976, page 469; Levy 1978, page 490.)

Trade was important for the Costanoan groups, and their primary partners in trade were the Plains Miwok, Sierra Miwok, and Yokuts. The Costanoan provided coastal resources such as mussels, abalone shell, dried abalone, and salt to the Yokuts in exchange for piñon pine nuts. The Miwok obtained olive snail shells from the Costanoans. Warfare occurred between Costanoan tribelets as well as the Esselen, Salinan, and Northern Valley Yokuts. (Davis 1961, page 19; Levy 1978, page 488.)

A common archaeological manifestation of a Costanoan village site is the shell mound deposit (Kroeber 1976, page 466). Mussels are the primary shells that constitute these mounds, in addition to other household wastes.

The Spanish established seven missions in Costanoan territory between 1770 and 1797. By 1810, the mission system subsumed the last Costanoan village. Missions in the Bay Area mixed various language and cultural groups including the Esselen, Foothill Yokuts, Plains Miwok, Saclan Miwok, Lake Miwok, Coast Miwok, and Patwin. The mission closest to the proposed project area was Santa Clara de Asís, built in 1777. The mission is no longer extant, but the area is still rich in archaeological manifestations from the mission period and before. (Levy 1978, page 486.)

Historic Context

To inform an understanding of the potential significance of built environment resources near the project, a review of the major historical timeline markers for the project area provides context. This subsection offers a brief look at those events and trends in the history of the Santa Clara Valley region, especially for the project site:

- Spanish Mission Period
- Mexican Period
- American Period
    - Transportation and Railroads
    - Agriculture and Fruit Industry
    - Post-World War II (WWII) and Silicon Valley
    - San Tomas Aquino Creek
    - Project Site History

Spanish/Mission Period (1769 to 1821)

The Spanish Period hosted several important developments, such as the establishment of Spanish colonial military outposts (presidios), pueblos, and 21 missions throughout Alta California. Nearest to the location of the proposed project were the Santa Clara de Asís Mission (1777), El Pueblo de San José de Guadalupe (1777) and associated Mission (1797), and Santa Cruz Mission (1791). The Spanish government also awarded land grants to soldiers and others and thus began the tradition of large land grants used for agriculture and livestock. Little remains of the cultural landscape that existed during this

time aside from some roads that follow the same early transportation routes (Santa Clara County 2012, pages 22–26).

Mexican Period (1821 to 1848)

Following Mexican independence from Spain in 1821, Mexican Governor Pío Pico granted lands to Mexican settlers, including the former mission lands, whose connection to the government was lost in the Decree of Secularization in 1834. The Mexican governor granted 43 ranchos in the Santa Clara Valley between 1802 and 1845. Local planning agencies lack detailed information on the location and integrity of these early California sites (SCC 2012, pages 30–32). The project site appears to be within the boundaries of the Rancho Ulistác (USGS 1899). Governor Pío Pico granted the land in 1845 to two Santa Clara Mission Indians: Marcelo Pio and Cristóbal. After the Mexican War (1846–1848), Jacob D. Hoppe obtained title to the rancho. Following Hoppe's death, his heirs divided and sold the land (Oosterhous et al. 2002, page 6). Santa Clara County's historic context statement laments that most traces of original haciendas, adobes, and other rancho structures are not discernible in the landscape today and few records of them exist (SCC 2012, page 32).

American Period (1848 to Present)

California became the 31st state in the Union in 1850. In 1851, Santa Clara College, now Santa Clara University, was founded on the site of the Santa Clara de Asís Mission. The incorporation of the City of Santa Clara followed in 1852. In 1866, the city officially established a gridded street system to accommodate anticipated growth. Today, this area is known as the Old Quad neighborhood. Early industries in the city included wheat production and flour milling, seed and fruit packing, and manufacturing. Leather tanning and wood products were two key industries of the city well into the twentieth century. Similarly, seed growing and fruit farming and packing (especially pears, cherries, apricots, and prunes) were mainstays, contributing to the city's exports. (Santa Clara 2010, page 3-2.)

Transportation and Railroads

Railroads played a significant part in the development of the Santa Clara Valley. In 1869, the Western Pacific Railroad completed a rail line from Niles, California, to San Jose, California, effectively connecting San Jose with the Transcontinental Railroad. This opened new markets for the agricultural and manufactured products of the entire Santa Clara Valley. Senator James Fair, a multi-millionaire, envisioned a route from the east side of San Francisco Bay, south to San Jose, then on to Los Gatos and through the mountains to Felton, ultimately connecting to Santa Cruz. Senator Fair incorporated the South Pacific Coast Railroad in 1876 and immediately began building the segment from Dumbarton in the East Bay to Los Gatos, by way of Santa Clara and San Jose. Following that segment, the rail line passed through the Santa Cruz Mountains to connect with the narrow-gauge railroad at Felton. The Southern Pacific Railroad (SPRR) acquired these rail lines in 1887 and eventually converted the narrow-gauge lines to standard gauge (Lehmann 2000, pages 31–33).

The SPRR Monterey Division segment from San Francisco to San Jose was originally constructed in 1864 by the San Francisco and San Jose Railroad Company and purchased by SPRR in 1869. The SPRR extended the tracks to Gilroy in 1869, then to Hollister in 1871 and Tres Pinos in 1873 (JRP 2002, pages 10–12). This railroad line provided freight and passenger access from San Francisco to the South Bay, San Jose, South County regions and beyond. A 1915 U.S. Geological Survey (USGS) topographic map shows the entire route of the SPRR Santa Cruz and Monterey Divisions from central San Jose through the Santa Cruz Mountains to Santa Cruz and Monterey respectively and indicating an ultimate connection to Los Angeles (USGS 1915). The Monterey Division passed adjacent to the project site where the alignment is currently used by Caltrain. The California Department of Transportation (Caltrans) assumed operation of the railroad right-of-way (ROW) from SPRR in 1979, hence the name 'Caltrain' in use today. The Peninsula Corridor Joint Powers Board purchased the ROW from San Francisco to San Jose and obtained trackage rights in the southern section in 1991 (JRP 2002, page 34).

Santa Clara Valley Agriculture and Fruit Industry

Fruit orchards and vegetable farms dominated the Santa Clara Valley from the 1890s to the 1940s. Wheat and flour milling were the first major agricultural activities. In support of the fruit and vegetable industry, canning operations flourished in the northeastern portion of the county. Fruit packing companies were common in Santa Clara Valley in the first third of the twentieth century. Nearly half of the world's supply of fresh, dried, and canned fruit through the end of WWII originated from the valley. The agricultural base economy and its support operations were gradually displaced by expanding suburban development, light industrial, and high-tech research and development (R&D) operations by the 1970s (Fike 2016, page 2).

Post WWII and Silicon Valley

The Santa Clara Valley's current commercial and industrial operations are indicative of the shift that took place after WWII from agricultural-based businesses to light industrial and ultimately high-tech R&D facilities. The Owens-Corning plant was one of the first new industrial businesses in the Santa Clara Valley and represents the shift toward industrial business in the valley after WWII. A 1949 aerial photograph shows the brand-new plant along Lafayette Street with agricultural uses surrounding it (Draper 1949). The plant remains in that location today. Throughout the valley, residential home developments slowly replaced orchards and agricultural fields. Due to the increased pressure from housing, the city of Santa Clara grew from 6,500 residents in 1940 to 86,000 by 1970 (Fike 2016, page 2). The landscape was forever transformed.

From 1960 to 1980, much of the industrial growth was in the electronics research and manufacturing sectors. The city of Santa Clara is home to Intel, Applied Materials, Sun Microsystems, Nvidia, National Semiconductor, and other high technology companies (Santa Clara 2010, pages 3-3 through 3-6). More recently, Santa Clara has become home to numerous data centers supporting the operations of the high technology companies of the Silicon Valley. This represents yet another contextual shift in the history of the Santa

Clara/Silicon Valley of Santa Clara, Santa Clara County, California. The project site is located 3.54 miles south of the San Francisco Bay, encompasses approximately 5.12 acres, and is located at 2809 Bowers Avenue in Santa Clara, California, Assessor's Parcel Number (APN) 216-28-063. The project site is located within Township 6S, Range 1W, Section 33 of the *San Jose West*, *California* USGS 7.5-minute Topographic Quadrangle Map (Bursan 2022, page 6).

The parcel is irregularly shaped and is generally bound to the northeast by a laboratory and semiconductor facility, to the north by a commercial R&D building, to the west by Bowers Avenue, to the east by a one-story commercial building, to the southeast by a lot with active construction of a data center, and to the south by a Silicon Valley Power (SVP) substation. The closest residential uses are to the south on the other side of the SVP substation and a railroad ROW. The current building on site dates to 1974 (GI Partners 2022b, Appendix D from Phase I Site Assessment; Santa Clara 2023a).

The project site served as farmland from at least 1939 to the 1970s (Bursan 2022, page 6). Maps and aerial images indicate that from 1939 to 1975 there existed orchards in the vicinity of the project site. A creek historically ran along the eastern edge of the project site. The 1953 USGS topographic map labels the creek along the eastern edge of the property as Saratoga Creek. Saratoga Creek has had a few names over the years: Campbell's, Sanjon, and Quito creeks. The name was changed to Saratoga Creek sometime between the end of WWII and 1951 (Hickman 1974, page 11). Southeast of the project site, the creek may have been diverted to join the San Tomas Aquino Creek to the east in the 1950s (Hickman 1974, page 12). Historical aerial images show remnants of the creek along the eastern edge of the project property sometime between 1974 and 1982 (GI Partners 2022b, Appendix D from Phase 1 Site Assessment). Both creeks' origins are in the foothills of the South Coast Ranges. Throughout the early nineteenth century, most creeks originating in the foothills did not maintain a defined channel from the hills to the bay, including San Tomas Aquino and Saratoga creeks (SFEI 2010, pages 13–14). Portions of Saratoga Creek were straightened as early as 1897, especially in the project site area. San Tomas Aquino Creek also appears to have been straightened by 1897 (USGS 1897). Today, a bicycle trail traverses the west side of the channel on a levee. The San Tomas Aquino Creek and bicycle trail are approximately 0.25 mile east of the project site.

Suburban residential development appears southwest of the project site as early as the 1950s. That development continued in the 1960s and the early 1970s (Bursan 2022, page 6). By 1974, the property had been cleared of all agricultural uses. The parcel was developed as a commercial property in 1974. Maps and aerial images indicate similar histories on some of the adjacent properties.

Methods

Project Area of Analysis

The project area of analysis (PAA) defines the geographic area in which the proposed project has the potential to affect cultural or tribal cultural resources. Effects may be immediate, further removed in time, or cumulative. They may be physical, visual, audible, or olfactory in character. The PAA may or may not be one uninterrupted expanse. It could include the site of the proposed project (project site), the routes of requisite transmission lines and water and natural gas pipelines, and other offsite ancillary facilities, in addition to one or several noncontiguous areas where the project could arguably affect cultural or tribal cultural resources.

The California Energy Commission (CEC) staff defines the PAA as comprising the proposed project site, immediately adjacent parcels, and all appurtenant, proposed improvements. The PAA has archaeological, ethnographic, and historic built environment components, as described in the following paragraphs.

The CEC staff defines the archaeological component of the PAA as all areas in which the applicant proposes ground disturbance to construct, operate, and decommission the proposed project. This includes building demolition, the proposed building site, areas slated for concrete and hardscape removal, areas to be filled and graded, staging and laydown areas, installation of underground utilities, construction of new utility substation, subsurface drainage, stormwater treatment areas, recycled water pipeline extension, utility tie-ins, and installation of up to three transmission line poles. The applicant proposes demolition and excavation to variable depths ranging from three feet to 16 feet below grade. Trenching for the recycled water pipeline extension and utility interconnects would extend up to 16 feet below grade (GI Partners 2022f, page 13–14).

For ethnographic resources, the PAA considers sacred sites, tribal cultural resources, traditional cultural properties (places), and larger areas such as ethnographic landscapes that can be vast and encompassing, including view sheds that contribute to the historical significance of such resources. The Native American Heritage Commission (NAHC) assists project-specific cultural resources consultants and agency staff in identifying these resources, and consultation with Native Americans and other ethnic or community groups may contribute to defining the PAA. In the case of the proposed project, the immediate environs consist largely of commercial and light industrial buildings, offices, a park, residential areas, and an electrical substation. The CEC staff therefore treats the ethnographic component of the PAA as coinciding with the archaeological component.

The proposed project site consists primarily of a two-story office building, pavement, hardscape, and modest landscape elements, much of which dates to 1974. The historic built environment PAA for this project includes the project site and properties within a one-parcel boundary of the project site, and associated linears. This includes all properties directly adjacent to the recycled water line extension alignment. The adjacent parcels are listed in **Table 4.5-1**.

TABLE 4.5-1 PARCELS ADJACENT TO THE PROJECT SITE

Address	Assessor Parcel Number	Description	Year Constructed
2747 Bowers Ave	216-28-062	Uranium Substation	1976
2810 Bowers Ave	216-28-087	Gymnastics building/building supplies store	1972
2855 Bowers Ave	216-28-077	Commercial building	1975
2930 Bowers Ave	216-48-037	Fast food restaurant	1976
2800 Kifer Ave	216-28-085	Warehouse	1972
2800 Mead Ave	216-28-110	Distribution Center	1977
2820 Northwestern Parkway	216-28-132	Data Center campus	1977
2551 Walsh Ave	216-28-130	Commercial building	1974
2630 Walsh Ave	216-28-106	Commercial building	1977

The first pedestrian survey completed on June 22, 2022, by the applicant's consultants (PaleoWest) did not identify any buildings or structures on adjacent properties to be 45 years or older (Bursan 2022, page 12). However, CEC staff was aware of the SVP Uranium Substation which finished construction in 1976, making it at least 45 years old. City of Santa Clara (City) building permit records indicated that buildings or structures on at least six additional parcels adjacent to the project site or the recycled water line extension pipeline were at least 45 years old. (Santa Clara 2023a.) The applicant's consultant prepared a supplemental report at staff's request to investigate properties within one parcel distance from the project site and the recycled waterline extension. Buildings or structures at the seven adjacent parcels identified by staff were determined to be 45 years or older and were evaluated for their eligibility for the CRHR, and the City's local register as well as an additional built environment resource identified by the applicant's consultants (Sinsky, Goldman, and van Onna 2023).

Literature Review

The literature review for this analysis consisted of a records search at the California Historical Resources Information System, review of the application for small power plant exemption, and examination of pertinent literature concerning cultural resources in the northern Santa Clara Valley.

The applicant conducted the records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System on June 20, 2022 (Sinsky and Eddy 2022, page 5). The NWIC is the State of California's official repository of cultural resource records, previous cultural resources studies, and historical information concerning cultural resources for 18 counties, including Santa Clara County. The records search area included the project site and a 0.5-mile buffer around it (Sinsky and Eddy 2022, page 5).

CEC staff also examined historic maps and aerial photographs of the PAA and vicinity to identify cultural resources (Edward Denny & Co. 1913; GI Partners 2022b, Appendix D

from Phase 1 Site Assessment; GLO 1866; USGS 1897, 1899). These sources depict the historic appearance of the PAA each decade from 1857 through 1980 (except the 1870s, 1880s, 1900s, and 1920s). The historic maps studied date to 1897, 1899, 1953, 1961, 1968 1973, 1980 and 2012, and include the following USGS quadrangles: Palo Alto, San Jose (15-minute series), Cupertino, Milpitas, Mountain View, and San Jose West (7.5-minute series). The historic aerial images studied are: 1939, 1948, 1950, 1956, 1963, 1968, 1974, 1982, 1993, 1998, 2006, 2009, 2012 and 2016.

In addition, the CEC staff consulted:

- City of Santa Clara General Plan 2010–2035 (General Plan), including its Historic Preservation and Resource Inventory (Santa Clara 2010)
- County of Santa Clara Historic Context Statement (SCC 2012)
- MAP Santa Clara tool (Santa Clara 2023b).

CEC staff also consulted the National Register of Historic Places (NRHP), CRHR, Historic American Building Survey, Historic American Engineering Record, Historic American Landscape Survey, and other repositories of documentation of historical resources.

Tribal Consultation

Applicant's Correspondence

The applicant contacted the NAHC on July 11, 2022, to request a list of tribes that might be interested in the project and to conduct a search of the Sacred Lands File. The NAHC responded on August 8, 2022, reporting that the results of the Sacred Lands File search were negative, and provided contact information for 11 representatives of California Native American tribes. These individuals represent:

1. Amah Mutsun Tribal Band
2. Amah Mutsun Tribal Band of Mission San Juan Bautista
3. Indian Canyon Mutsun Band of Costanoan
4. Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
5. North Valley Yokuts Tribe
6. The Ohlone Indian Tribe
7. Wuksachi Indian Tribe/Eshom Valley Band
8. Tamien Nation

The applicant did not contact the individuals identified in the contacts list in their identification efforts (Campagne 2022a; Sinsky and Eddy 2022, page 8).

CEC Staff Consultation

The California Environmental Quality Act (CEQA) requires lead agencies to consult with all California Native American tribes that have traditional and cultural affiliation with the geographic area of a project, and that have previously requested consultation. To invoke an agency's requirement to consult under CEQA, a tribe must first send the lead agency a written request for formal notification of any projects within the geographic area with which they traditionally and culturally affiliate. (Pub. Resources Code, § 21080.3.1(b).) The CEC has a request for formal notification on file from the Tamien Nation and the Wuksachi Indian Tribe/Eshom Valley Band, both California Native American tribes that have traditional and cultural affiliation with the geographic area of the proposed project (Geary 2021; Woodrow 2016). Accordingly, the CEC's Tribal Liaison mailed a letter (dated October 6, 2022) to the Tamien Nation's chairperson and Tribal Historic Preservation Officer, and to the Wuksachi Indian Tribe/Eshom Valley Band's chairperson inviting consultation pursuant to Public Resources Code, section 21080.3.1, and providing general information concerning the proposed project and its location (CEC 2022b). The CEC also initiated consultation under Public Resources Code, section 21080.3.1, with the Tamien Nation after receiving the tribe's request for formal consultation on October 7, 2022 (see the discussion under "Results"). Consistent with the CEC's tribal consultation policy (CEC 2021a), CEC staff contacted the NAHC on September 1, 2022, to request a search of the Sacred Lands File and a list of California Native American tribes that might be interested in the proposed project. The NAHC responded on October 7, 2022, and provided a list of eight California Native American tribes to contact (Campagne 2022b). In addition to the Tamien Nation and Wuksachi Indian Tribe/Eshom Valley Band, CEC staff mailed initial consultation letters to the Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, North Valley Yokuts Tribe, and Ohlone Indian Tribe on October 6, 2022 (CEC 2022b). See the following subsection, "Results," for tribal responses and lead agency follow-up.

Archaeological Survey

An archaeologist retained by the applicant conducted a reconnaissance survey of the project area on June 22, 2022. Because of the extent of development within the project area, less than 10 percent of the ground surface was visible, making regular transects ineffective. Instead, efforts to identify archaeological materials focused on inspecting areas of visible ground surface exposed in landscaped areas within and surrounding the parking lot at 2805 Bowers Avenue (Bursan 2023, page 12).

Historic Architectural Survey

A historian retained by the applicant conducted an architectural survey of the project site, the recycled waterline, and adjacent parcels. CEC staff conducted an architectural investigation inclusive of the project site and a one-parcel buffer from the proposed project boundaries. Buildings or structures 45 years or older, or considered significant, were identified as part of this effort. Any building or facility constructed in 1977 or earlier,

or potentially eligible for the CRHR or local register, was surveyed and evaluated by the applicant's consultant for potential significance (Sinsky, Goldman, and van Onna 2023).

Results

Literature Review Results

The NWIC records search identified two previous cultural resources studies conducted within the project site (Jurich et al. 2011; Nelson et al. 2000). Fourteen previous cultural resources studies have been conducted within 0.5 mile of the proposed project (Baker 1998; Basin 2009a, 2009b; BioSystems 1989; Carrico et al. 2000; Cubie 2015; Flynn 1979; Hammerle 2015; Hickman 1974; Holson et al. 2002; Jones & Stokes 2001; Loveland et al. 1987; Nelson et al. 2002; SWCA 2006).

The NWIC has no records of previously recorded cultural resources in the PAA or within 0.5 mile of the project site (Sinsky and Eddy 2022, page 5). However, the nearby railroad line (P-43-000928) has been surveyed for infrastructure for the entire Caltrain corridor on the San Francisco Peninsula (Murray 2021, page 9). Staff identified one additional cultural resource that has been previously investigated, the San Tomas Aquino Creek, located approximately 0.25 mile from the project site (Baker 1998). Both resources have previously been evaluated, and for the purposes of CEQA found not to be historical resources (CEC 2021b, pages 5.5-14 – 5.5-15, and Murray 2021, page 11).

Tribal Consultation Results

The October 7, 2022, search of the Sacred Lands File did not identify Native American cultural resources in the search area (Campagne 2022b).

The Wuksachi Indian Tribe/Eshom Valley Band has not responded to the CEC's invitation to consult under Public Resources Code, Section 21080.3.1.

In response to the CEC Tribal Liaison's letters inviting consultation under Public Resources Code, section 21080.3.1, the Tamien Nation requested consultation (letter dated November 2, 2022) about the following topics.

- Recommended mitigation measures
- Significant effects of the project
- Type of environmental review necessary
- Significance of tribal cultural resources, including any regulations, policies or standards used by the CEC to determine significance of tribal cultural resources
- Significance of the project's impacts on tribal cultural resources
- Project alternatives and/or appropriate measures for preservation or mitigation that Tamien Nation may recommend, including, but not limited to:

- Avoidance and preservation of the resources in place, pursuant to Public Resources Code section 21084.3, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria;
- Treating the resources with culturally appropriate dignity considering the tribal cultural values and meaning of the resources, including but not limited to the following:
  - Protecting the cultural character and integrity of the resource;
  - Protecting the traditional use of the resource; and
  - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Protecting the resource.

Tamien Nation also requested any cultural resources assessments or other assessments that have been completed on all or part of the PAA, as well as the results of records searches conducted at the NWIC related to the project. The requested project information and documents were provided electronically to the Tamien Nation and a consultation meeting between the CEC and the Tamien Nation was held on February 1, 2023. At the meeting the Tamien Nation expressed the need for archaeological and Native American monitoring of the construction of the project due to the relative sensitivity of the project area and the potential for encountering buried cultural deposits and Native American ancestral remains. Additionally, the Tamien Nation requested that they be consulted in the development and review of any monitoring plans for the project, that the Tribe have an opportunity to provide tribal cultural resources sensitivity training in conjunction with the proposed Worker Environmental Awareness Program training, and that consultation with the CEC include review of the Cultural and Tribal Resources section of the draft environmental impact report. The CEC staff continued consultation with the Tamien Nation in the drafting of this environmental impact report and had incorporated the Tribe's requests into the staff proposed mitigations. Consultation between the CEC and Tamien Nation is ongoing at the time of writing this report; CEC staff will update this results discussion in the final environmental impact report (FEIR) after consultation concludes.

Archaeological Survey Results

The applicant's consultant found the archaeological PAA to be almost completely covered in pavement, hardscape, buildings, and landscaping. Landscaped areas offered minimal opportunity to visually inspect the ground surface in the archaeological PAA. The surveyors did not identify any archaeological resources in the archaeological PAA. (Bursan 2023).

Historic Architectural Survey Results

The built environment PAA used for this project includes properties within a one-parcel boundary of the project site and the recycled water line extension alignment. The study area was established to analyze the project's potential for impacts to built environment historical resources. The initial built environment survey and archival search conducted by the applicant found one property containing buildings or structures 45 years or older within the PAA. The CEC staff identified seven historic-era resources 45 years or older within the PAA. A subsequent investigation by the applicant's consultant concurred with the CEC staff's conclusion and identified an additional historic-era resource within the PAA (Sinsky, Goldman, and van Onna 2023; also see CEC 2022c, page 8). Historic built environment resources 45 years or older are at 2805 Bowers Avenue, 2855 Bowers Avenue, 2810 Bowers Avenue, 2800 Kifer Road, 2930 Bowers Avenue, 2630 Walsh Avenue, 2820 Northwestern Parkway, 2800 Mead Avenue, 2551 Walsh Avenue, and the Uranium Substation at 2747 Bowers Avenue. These resources have been surveyed and evaluated by the applicant's consultant (Sinsky, Goldman, and van Onna 2023).

2805 Bowers Avenue

The building at 2805 Bowers Avenue is a two-story, commercial building designed with a nod to the Spanish Colonial Revival style of architecture. This is found in the clay tile roof, the stucco-clad exterior surfaces, and the second floor's arched windows. The property of the project site is completely developed, consisting of the commercial building, a surface parking lot, and landscape elements. The property was developed for Versatec in 1974 to house its roughly 220 employees. Versatec became a subsidiary of Xerox in 1975, but continued to use the building at 2805 Bowers Avenue until 1990 when Veratec was dissolved. McAfee occupied the building in the late 1990s and early 2000s. Since then, small operations and businesses have leased the property. While the building is associated with the rapid growth of the Santa Clara Valley and the rise of the tech industry in Santa Clara, it is not directly associated with any significant events in the development and there is no evidence that the company that occupied it during the historic period, Versatec, was significant either as an independent company or as a subsidiary of Xerox (CRHR Criterion 1). Archival research failed to indicate any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR Criterion 2). While Versatec president Renn Zaphiropoulos, who was a respected businessman in the Silicon Valley, ran the company from 1969 to 1975 when 2805 Bowers Avenue was acquired, his association with the building was short and not significant (CRHR Criterion 3). The building is a modest example of Spanish Colonial Revival style which does not possess sufficient distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople. The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages 40–44 and Attachment D). This lack of historical or architectural significance makes it ineligible

for listing under the CRHR or the City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

Uranium Substation

The SVP Uranium Substation was constructed from 1974 to 1976. Like the neighboring properties, the substation is located on what was farmland until the 1970s. Sited on an irregularly shaped parcel at 2705 Bowers Avenue in the city of Santa Clara, the substation comprises utilitarian buildings and structures typical of these kinds of facilities. Clues to its origins in the mid-1970s include the concrete block utility building with a shed roof and wood panel fascia evoking the shed style popular in the 1970s, and the north concrete block entry wall bearing the substation's name in metal lettering. The substation was constructed to support ongoing population and industry growth within the context of a larger electrical system (Sinsky, Goldman, and van Onna 2023, Attachment D). While it is associated with the rapid growth of the Santa Clara Valley and the rise of the tech industry in Santa Clara, it is not directly associated with any significant events in the development of the SVP electrical infrastructure (CRHR Criterion 1) (Sinsky, Goldman, and van Onna 2023, Attachment D). The SVP Uranium Substation has no significant historical or architectural associations (CRHR Criterion 2) (Sinsky, Goldman, and van Onna 2023, page 68). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria (CRHR Criterion 3). The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4). Thus, the resource does not qualify as a historical resource under CEQA.

2800/2810 Bowers Avenue

The building located at 2800/2810 Bowers Avenue is a one-story mixed use commercial space and retail store building built in 1974. It features a flat roof, symmetrically placed columns with decorative protrusions above the window line and a painted blue line along the top section of the north, south, and east exterior walls and a painted red line along the top section of the west exterior wall, but otherwise has minimal detailing. The entrances have two security doors bordered by divided windows. Both the north and south sides of the building have two rolling garage doors. The property at 2800/2810 Bowers Avenue is a commercial building commonly found in California. While it is associated with the rapid growth of the Santa Clara Valley, it is not directly associated with any significant events in the development (CRHR Criterion 1). Research failed to indicate any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR Criterion 2). The building does not possess sufficient distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople (CRHR Criterion 3). The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages

44–47 and Attachment D). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

2855 Bowers Avenue

The building located at 2855 Bowers Avenue is a one-story commercial R&D building with Spanish Colonial Revival influences. The roof is flat with hipped eaves and symmetrically placed concrete buttresses along the exterior walls of the building. Large concrete arches within the exterior walls contain the building's doors and windows. A surface parking lot and drive-thru surrounds the east and south of the building respectively, while mature trees and other landscaping elements surround the north and west of the building. While the building is associated with the rapid growth of the Santa Clara Valley, it is not directly associated with any significant events in the development (CRHR Criterion 1). Research failed to indicate any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR Criterion 2). The building is a modest example of Spanish Colonial Revival style which does not possess sufficient distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople (CRHR Criterion 3). The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages 47–50 and Attachment D). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

2930 Bowers Avenue

The building located at 2930 Bowers Avenue is a one-story fast-food restaurant building constructed in 1976 which houses a Carl's Jr. franchise. The building is constructed with white bricks and possesses typical chain restaurant features such as painted wood trim along the roof line and along the top of the building. The north side of the building features a covered outdoor dining area. There is a darker brick band along the lower third of the walls, and the roof is hipped with a wide overhang and upper capital at the top. Most walls mostly have inoperable picture windows flanked by a glass full-lite doors on either side. The building is surrounded by a surface parking lot and drive-through. The building at 2930 Bowers is a fast-food restaurant like many found throughout California, and research has not found it to be directly associated with any significant events or patterns in history (CRHR Criterion 1). Research failed to indicate any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR Criterion 2). The property at 2930 Bowers Avenue is a commercial building commonly found in California which does not possess sufficient distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople (CRHR Criterion 3). The building is not likely to yield important

new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages 50–52 and Attachment D). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

2800 Kifer Road

The building located at 2800 Kifer Road is a one-story warehouse and retail store constructed in 1972. The building is irregularly shaped with an entrance on the east side of the building and loading bays on the north and southeast side of the building. The exterior walls are smooth concrete with minimal detailing, partially covered oblong windows on the east side of the building and northeast side of the building, and a flat roof. The warehouse is surrounded by a surface parking lot. While the building is associated with the rapid growth of the Santa Clara Valley, it is not directly associated with any significant events in the development (CRHR Criterion 1). Research failed to indicate any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR Criterion 2). The property at 2800 Kifer Road is a utilitarian commercial warehouse building commonly found in California which does not possess sufficient distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople (CRHR Criterion 3). The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages 53–55 and Attachment D). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

2630 Walsh Avenue

The building at 2630 Walsh Avenue is a one-story commercial building designed with a nod to the Spanish Colonial Revival style of architecture. It was constructed in 1977 as a R&D center. There are large, inoperable arched picture windows set on the east, west, and north walls of the buildings. The roof is flat with hipped, tiled eaves around the exterior of the building. Concrete buttresses between sets of arches support the roof. The east side of the property is landscaped with grass, planters, and mature trees. A surface parking lot surrounds the north, west, and south sides of the building. The main entrance on the east side faces the street, and a secondary entrance on the south side faces the parking lot and is flanked by landscaping elements and mature trees. While the building is associated with the rapid growth of the Santa Clara Valley, it is not directly associated with any significant events in the development (CRHR Criterion 1). Research failed to indicate any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR Criterion 2). The building is a modest example of Spanish Colonial Revival style which does not possess sufficient

distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople (CRHR Criterion 3). The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages 60–64 and Attachment D). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

2820 Northwestern Parkway

The building located at 2820 Northwestern Parkway is a part of a larger data center campus constructed in 1977. It is a two-story building with exterior walls comprised of precast concrete segments and a flat roof. The main entrance is on the east side of the building and is accented by a rectangular glass section that extends into the second story. The building underwent significant modifications between 2011 and 2014, and an addition in 2016 to fill in the southwest corner. While the building is associated with the rapid growth of the Santa Clara Valley and the rise of the tech industry in Santa Clara, it is not directly associated with any significant events in the development and there is no evidence of any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR criteria 1 and 2). The property at 2820 Northwestern Parkway is a grouping of large data center buildings like many others found in Silicon Valley and it does not possess sufficient distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople (CRHR Criterion 3). The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages 57–60 and Attachment D). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

2800 Mead Avenue

The building located at 2800 Mead Avenue is a one-story distribution center constructed in 1977. It is constructed with smooth concrete and has a flat roof. The exterior walls feature minimal detailing, irregularly placed rectangular concrete pillars extending out from the walls, windows alternating with decorative striped rectangular slabs, and a blue band running along the top third of the building and the roof line. The main entrance on the south side of the building is flanked by two planters each built into the gap between two concrete pillars with concrete accent walls behind the planters. The entrance has two sliding doors flanked by divided picture windows. There is a loading dock with three rolling garage doors to the west of the main entrance. The north end of the building has a secured fenced in area used for storage of large items. There are also two rolling garage

doors in this secured area. The building is surrounded on the north, east, and south by paved parking areas for vehicular access, and by a grass lawn on the west. While the building is associated with the rapid growth of the Santa Clara Valley, it is not directly associated with any significant events in the development (CRHR Criterion 1). Research failed to indicate any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR Criterion 2). The property at 2800 Mead Avenue is a utilitarian commercial warehouse building commonly found in California which does not possess sufficient distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople (CRHR Criterion 3). The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages 55–57 and Attachment D). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

2551 Walsh Avenue

The building located at 2551 Walsh Avenue is a one-story commercial building constructed in 1977. It was originally constructed as part of a three-building development with a cohesive design, however, one of the buildings has been demolished, and the other is outside of the project area of analysis. It has a flat roof and a mostly rectangular floor plan with a small section jutting out on the southeast corner of the building. A series of repeating rectangular segments made up of a protruding façade on top and brickwork fenced in by rectangular windows below, as on the south side of the building, and separated by concrete pilasters comprise the exterior walls. The east and north side feature a minimal version of this detailing with inlaid pilasters, and a non-protruding beige façade on top and a plain tan wall beneath. While the building is associated with the rapid growth of the Santa Clara Valley, it is not directly associated with any significant events in the development (CRHR Criterion 1). Research failed to indicate any significant direct association between individuals that are known to be historic figures at the national, state, or local level (CRHR Criterion 2). The property at 2551 Walsh Avenue is a commercial building commonly found in California which does not possess sufficient distinctive characteristics to be considered a significant representative example of the style. The building is also not the work of a master or any other significant architects, builders, or craftspeople (CRHR Criterion 3). The building is not likely to yield important new information about design, construction methods, materials or engineering that could not be ascertained through literature review or from other existing sources (CRHR Criterion 4) (Sinsky, Goldman, and van Onna 2023, pages 69–71 and Attachment D). This lack of historical or architectural significance makes it ineligible for listing under the CRHR or City's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

Archaeological Sensitivity

The application and staff's literature review indicate that the potential for buried archaeological resources to occur in the project vicinity mirrors the high frequency of buried archaeological deposits throughout the Santa Clara Valley (Byrd et al. 2017, page 4-2; Hylkema 1998, page 20; Mission College 2019, pages 92–93). Researchers have identified at least 16 buried Native American archaeological sites in the Santa Clara Valley (Rehor and Kubal 2014, page 55, Table 8). Archaeologists working independently of the present analysis have estimated the PAA's likelihood to contain buried Native American archaeological resources as moderate (Byrd et al. 2017, Figure 27).

Regulatory Background

Federal

No federal regulations related to cultural or tribal cultural resources apply to the project.

State

California Environmental Quality Act. Various laws apply to the evaluation and treatment of cultural resources. CEQA requires lead agencies to evaluate cultural resources by determining whether they meet several sets of specified criteria that make such resources eligible to the CRHR. Those cultural resources eligible to the CRHR are historical resources. The evaluation then influences the analysis of potential impacts to such historical resources and the mitigation that may be required to ameliorate any such impacts.

CEQA and the CEQA Guidelines define significant cultural resources under two regulatory definitions: historical resources and unique archaeological resources. A historical resource is defined as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources", or "a resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." (Cal. Code Regs., tit. 14, § 15064.5(a).) Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the NRHP and California Registered Historical Landmarks from No. 770 onward (Pub. Resources Code, § 5024.1(d)).

CEQA generally considers a resource historically significant if it meets the criteria for listing in the CRHR. In addition to being at least 45 years old, a resource must meet one or more of the following four criteria (Pub. Resources Code, § 5024.1):

- Criterion 1, is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Criterion 2, is associated with the lives of persons important in our past;
- Criterion 3, embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Criterion 4, has yielded, or may be likely to yield, information important in prehistory or history.

In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (Cal. Code Regs., tit. 14, § 4852(c)).

Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA requires the lead agency to determine whether the resource is a historical resource as defined in Public Resources Code, sections 5020.1(j) or 5024.1.

In addition to historical resources, archaeological artifacts, objects, or sites can meet CEQA's definition of a unique archaeological resource, even if the resource does not qualify as a historical resource (Cal. Code Regs., tit. 14, § 15064.5(c)(3)). Archaeological artifacts, objects, or sites qualify as unique archaeological resources if it is clearly demonstrable that, without merely adding to the current body of knowledge, there is a high probability that the resource meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person (Pub. Resources Code, § 21083.2(g).)

To determine whether a proposed project may have a significant effect on the environment, staff analyzes the project's potential to cause a substantial adverse change in the significance of historical or unique archaeological resources. The magnitude of an impact depends on:

- the historical resource(s) affected;
- the specific historic significance of any potentially impacted historical resource(s);
- how the historical resource(s) significance is manifested physically and perceptually;
- appraisals of those aspects of any historical resource's integrity that figure importantly in the manifestation of the resource's historical significance; and
- how much the impact will change historical resource integrity appraisals.

Title 14, California Code of Regulations, section 15064.5(b) defines a "substantial adverse change" as the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."

California Native American Tribes, Lead Agency Tribal Consultation Responsibilities, and Tribal Cultural Resources. CEQA provides definitions for California Native American tribes, lead agency responsibilities to consult with California Native American tribes, and tribal cultural resources. A "California Native American tribe" is a "Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission (NAHC) for the purposes of Chapter 905 of the Statutes of 2004" (Pub. Resources Code, § 21073). Lead agencies implementing CEQA are responsible to consult with California Native American tribes about tribal cultural resources within specific timeframes. If tribal cultural resources could be impacted by a CEQA project, lead agencies are to exhaust the consultation to points of agreement or termination.

Tribal cultural resources are either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the CRHR
    b. Included in a local register of historical resources as defined in the Public Resources Code, section 5020.1(k).
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in the Public Resources Code, section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe. (Pub. Resources Code, § 21074(a).)

A cultural landscape that meets the criteria of Public Resources Code, section 21074(a), is a tribal cultural resource to the extent that the landscape is geographically defined in terms of its size and scope (Pub. Resources Code, § 21074(b)). Historical resources, unique archaeological resources, and non-unique archaeological resources, as defined at Public Resources Code, sections 21084.1, 21083.2(g), and 21083.2(h), may also be tribal cultural resources if they conform to the criteria of Public Resources Code, section 21074(a).

CEQA also states that a project with an impact that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (Pub. Resources Code, § 21084.2).

Local

City of Santa Clara General Plan 2010-2035. Section 5.6.3 of the General Plan outlines the goals and policies related to archaeological and cultural resources. The applicable goals in this section of the General Plan encourage the protection and preservation of cultural resources, including archaeological and paleontological sites, and encourage appropriate mitigation in the event of discovery during construction.

Relevant policies require protecting historic resources through avoidance or reduction of potential impacts, using the Secretary of the Interior's Standards for the Treatment of Historic Properties, and using the City's established historic preservation program for ensuring resource evaluation, protection, and integrity (Santa Clara 2010).

Appendix 8.9 of the General Plan, the Historic Preservation and Resource Inventory, established criteria for local significance and included a list of recorded historic properties (Santa Clara 2010). In addition, the City has embedded in its Municipal Code a section on Historic Preservation (Title 18 Zoning, Chapter 18.106, Historic Preservation). The purpose of Chapter 18.106 is "to promote the identification, protection, enhancement and perpetuation of buildings, structures and properties within the city that reflect special elements of the city's social, economical, historical, architectural, engineering, archaeological, cultural, natural, or aesthetic heritage" (Santa Clara 2018). The chapter requires maintenance of a Historic Resource Inventory.

Appendix 8.9 of the General Plan also identifies significance criteria for local listings. The Santa Clara City Council adopted the Criteria for Local Significance on April 20, 2004 and incorporated the criteria into the General Plan Appendix 8.9. Any building, site, or property in the city that is 50 years old or older and meets certain criteria of architectural, cultural, historical, geographical, or archaeological significance is potentially eligible. The Criteria for Local Significance established in General Plan Appendix 8.9 (Santa Clara 2010) are as follows:

Criterion for Historical or Cultural Significance - To be historically or culturally significant, a property must meet at least one of the following criteria:

1. The site, building or property has character, interest, integrity and reflects the heritage and cultural development of the city, region, state, or nation.
2. The property is associated with a historical event.
3. The property is associated with an important individual or group who contributed in a significant way to the political, social and/or cultural life of the community.
4. The property is associated with a significant industrial, institutional, commercial, agricultural, or transportation activity.
5. A building's direct association with broad patterns of local area history, including development and settlement patterns, early or important transportation routes or social, political, or economic trends and activities. Included is the recognition of urban street pattern and infrastructure.

6. A notable historical relationship between a site, building, or property's site and its immediate environment, including original native trees, topographical features, outbuildings, or agricultural setting.

Criterion for Architectural Significance - To be architecturally significant, a property must meet at least one of the following criteria:

1. The property characterizes an architectural style associated with a particular era and/or ethnic group.
2. The property is identified with a particular architect, master builder, or craftsman.
3. The property is architecturally unique or innovative.
4. The property has a strong or unique relationship to other areas potentially eligible for preservation because of architectural significance.
5. The property has a visual symbolic meaning or appeal for the community.
6. A building's unique or uncommon building materials or its historically early or innovative method of construction or assembly.
7. A building's notable or special attributes of an aesthetic or functional nature. These may include massing, proportion, materials, details, fenestration, ornamentation, artwork, or functional layout.

Criterion for Geographic Significance - To be geographically significant, a property must meet at least one of the following criteria:

1. A neighborhood, group, or unique area directly associated with broad patterns of local area history.
2. A building's continuity and compatibility with adjacent buildings and/or visual contribution to a group of similar buildings.
3. An intact, historical landscape or landscape features associated with an existing building.
4. A notable use of landscaping design in conjunction with an existing building.

Criterion for Archaeological Significance - For the purposes of CEQA, an "important archaeological resource" is one which:

1. Is associated with an event or person of
   a. Recognized significance in California or American history, or
   b. Recognized scientific importance in prehistory.
2. Can provide information, which is both of demonstrable public interest, and useful in addressing scientifically consequential and reasonable or archaeological research questions;

3. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
4. Is at least 100 years old and possesses substantial stratigraphic integrity; or
5. Involves important research questions that historical research has shown can be answered only with archaeological methods.

4.5.2 Environmental Impacts

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

Construction

Less Than Significant Impact with Mitigation Incorporated. No historic built environment resources meeting CEQA's criteria for historical resources are located on site or within the PAA. No archaeological or ethnographic resources meeting CEQA's criteria for historical resources occupy the surface of the PAA. Previous studies in the project vicinity, however, indicate that the PAA could harbor buried archaeological or ethnographic resources. The PAA is located between two waterways (Saratoga and San Tomas Aquino creeks) on the former grounds of historic farms. Archaeologists working independently of the present analysis have estimated the PAA's likelihood to contain buried, Native American archaeological resources as moderate (Byrd et al. 2017, Figure 27).

The ground disturbance required to build the proposed project would extend into native soils up to 16 feet below grade. Known buried archaeological sites in Santa Clara Valley are located at depths of 1.0–10.5 feet below grade (Rehor and Kubal 2014, Table 4-1). If such resources were to be damaged during construction, it would be considered a significant impact, particularly since virtually all archaeological sites 5,000 years or older occur only in buried contexts.

The applicant proposed measures to reduce impacts on unidentified historical resources that may exist within the project area (PD-CUL 1.1 through PD-CUL 1.9). The applicant proposed a requirement that a monitoring and treatment plan be developed in consultation with the qualified Native American monitor (PD-1.1). Staff evaluated this measure in the context of potential impacts and in consideration of requests from the Tamien Nation during consultation with the CEC staff and determined it was mostly sufficient to reduce impacts. In response to this request, staff incorporated the concerns expressed by the Tamien Nation. Also, the Tamien Nation is the only California Native American tribe to have consulted with the CEC on this project. The applicant did not include the identification of potential reburial locations on site as a component of the proposed monitoring and treatment plan, should tribal cultural resources be discovered. Staff proposes **CUL-1** requiring the development of a monitoring and treatment plan that includes the identification of potential reburial locations for tribal cultural resources and requires consultation with the Native American Monitor on the development of the monitoring and treatment plan. As discussed below, staff proposed measure **CUL-4** gives

preference to members of the Tamien Nation in the selection of Native American monitors. The applicant proposed Cultural Sensitivity Training prior to construction in conjunction with Archaeological Monitoring Contractor Awareness Training facilitated by the project archaeologist (PD CUL 1.9). Through consultation with the Tamien Nation, the tribe requested that Tribal Cultural Resources Sensitivity Training (a separate component of the training that provides the tribal perspective and complements the archaeologist's training material) be conducted by a Native American Monitor who is a member of the Tamien Nation. Staff evaluated this measure in the context of potential impacts and in consideration of the requests of the Tamien Nation and determined that the measure was not sufficient to reduce impacts. The proposed training did not include a Worker Environmental Awareness Training (WEAP), which includes a discussion of laws and penalties relating to cultural resource discoveries. Staff proposes **CUL-2**, requiring the preparation and implementation of a WEAP. The WEAP would be facilitated by the project archaeologist in conjunction with Tribal Cultural Resources Sensitivity Training conducted by the Native American monitor. Staff proposed **CUL-4** provides preference for members of the Tamien Nation in the selection of Native American monitors.

The applicant's measure, PD-CUL 1.2 proposes preliminary field investigations of the surface and subsurface soils in the project area after removal of pavement and prior to issuance of grading and building permits. Staff evaluated this measure in context of potential impacts and in consideration of requests from the Tamien Nation and determined that the measures were sufficient to reduce impacts. However, representatives from the Tamien Nation requested that subsurface testing not be included in the preliminary field investigation strategy, as testing itself could impact tribal cultural resources if they are present in the project area. In response to this request, staff has recommended in **CUL-1** that the Tamien Nation be consulted in the development of the preliminary field investigation. Staff proposes **CUL-3**, requiring preliminary field investigations be conducted.

The applicant's measures PD CUL 1.3 proposes monitoring of all ground-disturbing activities by a qualified archaeologist and a qualified Native American monitor. Staff evaluated this measure in context of potential impacts and in consideration of requests from the Tamien Nation and determined that the measure is sufficient to reduce impacts. However, representatives from the Tamien Nation requested that its members be granted preference for selection as qualified Native American Monitors for the proposed project. Staff proposes **CUL-4**, requiring monitoring for all ground-disturbing activities and providing preference to members of the Tamien Nation in the selection of Native American monitors.

The applicant's measure, PD CUL 1.4 relates to the evaluation and recovery of cultural materials. Staff evaluated this measure in context of potential impacts and determined that additional measures, including reporting and documentation protocols and recording discoveries on appropriate forms, would be needed to reduce impacts. Staff proposes **CUL-5**, requiring specific reporting and documentation protocols be followed, including

recording discoveries using California Department of Parks and Recreation 523 series forms, and evaluation of discoveries by a qualified archaeologist.

The applicant's measure, PD CUL-1.5 proposes to follow the provisions of California Health and Safety Code section 7050.5 and Public Resources Code sections 5097.9 through 5097.99, if human remains are found during the field investigation, grading or construction activities. Staff evaluated this measure in the context of impacts and determined it is sufficient to reduce impacts. Staff proposes **CUL-6** requiring compliance with section 7050.05 of the Health and Safety Code and sections 5097.9 through 5097.99 of the Public Resources Code in the event that human remains are discovered at any point during the project.

The applicant's measure, PD CUL-1.6 provides for on-site security measures and affords the qualified archaeologist and Native American monitor the opportunity to advise the City of Santa Clara's Community Development Director on the necessity for a security guard to ensure the safety of potential cultural resources. Staff evaluated these measures in context of potential impacts and determined that they are sufficient to reduce impacts. Staff proposes **CUL-7** requiring on-site security to ensure the safety of potential cultural resources.

The applicant's measure, PD CUL-1.7 proposes a final report be prepared and stipulates the contents of the report, including a summary of the results of investigations, data recovery activities, and compliance with the Cultural Resources Treatment Plan. Staff evaluated these measures in context with impacts and determined them to be sufficient to reduce impacts. Staff proposes **CUL-8** requiring a Closing Cultural Resources Report be prepared and submitted to the City of Santa Clara's Director of Community Development prior to issuance of any Certificates of Occupancy to reduce impacts.

The applicant's measure, PD CUL-1.8 requires the curation or reburial of archaeological materials or tribal cultural resources upon completion of the final report, and a qualified collections facility identified prior to issuing certificates of occupancy by the City of Santa Clara. Staff evaluated these measures in context with impacts and determined them to be sufficient. Staff proposes **CUL-9** requiring all recovered archaeological and tribal cultural materials be curated in a qualified curation facility or reburied upon completion of the Closing Cultural Resources Report, to reduce impacts.

With implementation of **CUL-1** through **CUL-9**, impacts to historical resources as defined in CEQA Guidelines section 15064.5, would be reduced to less than significant.

Operation

No Impact. Operation and maintenance of the proposed project would not require excavation or other ground-disturbance. Therefore, there would be no impact to historical resources, as defined in CEQA Guidelines section 15064.5.

b. Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to § 15064.5?

Construction

Less Than Significant Impact with Mitigation Incorporated. As discussed in CEQA environmental criterion "a" above for construction, implementation of **CUL-1** through **CUL-9** would reduce impacts to unique archaeological resources to a less-than-significant level.

Operation

No Impact. Operation and maintenance of the proposed project would not require excavation or other ground-disturbance. Therefore, there would be no impact to unique archaeological resources, as defined in CEQA Guidelines Section 15064.5.

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Construction

Less Than Significant Impact with Mitigation Incorporated. As discussed in CEQA environmental criteria "a" and "b" above for construction, implementation of **CUL-1** though **CUL-9** would reduce impacts to human remains to a less than significant level. In particular, **CUL-1** requires a treatment plan and identification of reburial locations, **CUL-2** requires cultural sensitivity training, and **CUL-6**, establishes a protocol to minimize or avoid impacts on inadvertently discovered human remains.

Operation

No Impact. Operation and maintenance of the proposed project would not require excavation or other ground-disturbance. Therefore, there would be no impact to human remains during operation and maintenance of the proposed project.

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

d. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

Construction

No Impact. There are no tribal cultural resources listed or eligible for listing in the CRHR or other state registers, NRHP, or local register of historical resources in the PAA, therefore no impacts would occur during construction.

Operation

No Impact. Ground-disturbing activities are not part of the operational or maintenance profile of the proposed project. Impacts on tribal cultural resources listed or eligible for listing in the CRHR or other state registers, NRHP, or local register of historical resources would therefore not occur during operation or maintenance.

e. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Construction

Less Than Significant Impact with Mitigation Incorporated. Although there are no known tribal cultural resources on or directly adjacent to the proposed site, ground disturbance associated with the proposed project could result in the exposure and destruction of buried, as-yet unknown California Native American archaeological resources that could qualify as tribal cultural resources. If these resources were to be exposed or destroyed, it would be a significant impact. Implementation of mitigation measures **CUL-1** through **CUL-9** would reduce impacts on buried, tribal cultural resources to a less than significant level (see CEQA environmental Checklist criteria "a" and "b" above).

Operation

No Impact. Ground-disturbing activities are not part of the operational or maintenance profile of the proposed project. Impacts on tribal cultural resources listed or eligible for listing in the CRHR or other state registers, NRHP, or local registers of historical resources would therefore not occur during operation and maintenance.

4.5.3 Mitigation Measures

CUL-1: Cultural Resources Identification, Monitoring, and Treatment Plan

Prior to the issuance of any grading permit, a project-specific Cultural Resources Identification, Monitoring, and Treatment Plan (Plan) shall be prepared. The Plan shall be prepared by a Secretary of the Interior-qualified archaeologist, in consultation with the Tamien Nation and a qualified Native American monitor registered with the Native American Heritage Commission (NAHC) with an interest in the city of Santa Clara and that is traditionally and culturally affiliated with the geographic area. The Plan shall reflect permit-level detail pertaining to depths and locations of all ground disturbing activities. The Plan shall be prepared and submitted to the City of Santa's Clara Director of Community Development prior to approval of any grading permit. The Plan shall contain, at a minimum:

- Identification of the scope of work and range of subsurface effects (including location map and development plan), including requirements for preliminary field investigation and construction monitoring.
- Description of the environmental setting (past and present) and the historic, California Native American archaeological, and ethnographic background of the parcel (potential range of what might be found).
- Development of research questions and goals to be addressed by the investigation (what is significant vs. what is redundant information).
- Detailed field strategy (including the preliminary field investigation) used to identify cultural deposits, record, recover, or avoid the finds and address research goals.
- Analytical methods.
- Handling and preservation of cultural materials.
- Report structure of the closing cultural resources report including a confidential technical report and layperson's report and an outline of document contents in one year of completion of construction (provide a draft for review before a final report).
- Disposition of the artifacts, including identification of potential reburial location(s) on site.
- Appendices: all site records, correspondence, and consultation with Native Americans, etc.

CUL-2: Worker Environmental Awareness Program Training

Prior to issuance of the grading permit by the City of Santa Clara's Community Development Department, and for the duration of ground disturbance, the project shall be required to submit evidence that Worker Environmental Awareness Program (WEAP) training was held for all existing and any new employees. The training shall be facilitated by the project archaeologist in coordination with a Native American representative registered with the Native American Heritage Commissions with an interest in the city of

Santa Clara and that is traditionally and culturally affiliated with the geographic area as described in Public Resources Code, section 21080.3. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed, and instructions to halt work in the vicinity of any potential cultural resource discovery, and notify the City-approved archaeologist and Native American cultural resources monitor. The Native American monitor shall provide a Tribal Cultural Resources Sensitivity Training in conjunction with the WEAP.

CUL-3: Preliminary Field Investigations

After removal of pavement at the project site and prior to grading, a Secretary of the Interior-qualified archaeologist and qualified Native American monitor shall conduct a pedestrian survey over the exposed soils to determine if any surface archaeological manifestations are present. Prior to issuance of any grading or demolition permits, the project applicant shall complete a preliminary field investigation program in conformance with the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan required under **CUL-1**. Results of the investigation shall be provided to the City of Santa Clara's Director of Community Development prior to issuance of any grading permit. If any finds were discovered during the preliminary field investigation, the project archaeologist shall implement **CUL-5** for evaluation and recovery methodologies. The results of the preliminary field investigation shall be submitted to the Director of Community Development for review and approval prior to issuance of any grading permit. The California Department of Parks and Recreation 523 series forms shall be submitted along with the report for any cultural resources encountered over 50 years old.

CUL-4: Construction Monitoring and Protection Measures

All ground-disturbing activities (e.g., grading and excavation) shall be completed under the observation of a Secretary of the Interior-qualified archaeologist and a qualified Native American monitor, registered with the Native American Heritage Commission (NAHC) with an interest in the city of Santa Clara. Preference in selecting Native American monitors shall be given to members of the Tamien Nation and Native Americans with:

- Traditional ties to the area being monitored.
- Knowledge of local Native American village sites and habitation patterns.
- Knowledge and understanding of Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.9 et seq.
- Ability to effectively communicate the requirements of Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.9 et seq.
- Ability to work with law enforcement officials and the Native American Heritage Commission to ensure the return of all associated grave goods taken from a Native American grave during excavation.

- Ability to travel to project sites within traditional tribal territory.
- Knowledge and understanding of Title 14, California Code of Regulations, section 15064.5.
- Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding California Environmental Quality Act (CEQA) mitigation provisions.
- Ability to read a topographical map and be able to locate site and reburial locations for future inclusion in the NAHC's Sacred Lands Inventory.
- Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.

The qualified archaeologist or a qualified Native American monitor, shall have authority to halt construction activities temporarily within a 50-foot radius of any cultural resources finds.

If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent, then a letter report detailing the rationale for making such a reduction and summarizing the monitoring results shall be provided to the Director of Community Development. If, for any reasons, the qualified archaeologist or a qualified Native American monitor is not present, but construction crews encounter a cultural resource, all work shall stop temporarily within 50 feet of the find until a qualified archaeologist in consultation with a qualified Native American monitor has been contacted to determine the proper course of action. The Director of Community Development shall be notified of any finds during the grading or other construction activities. Any human remains encountered during construction shall be treated according to the protocol identified in **CUL-6**.

CUL-5: Evaluation and Data Recovery

The City of Santa Clara's Director of Community Development shall be notified of any finds during the preliminary field investigation, grading, or other construction activities. Any historic or Native American cultural material identified in the project area during the preliminary field investigation and during grading or other construction activities shall be evaluated for eligibility for listing as a Candidate City Landmark or a California Historical Resource by a Secretary of the Interior-qualified archaeologist.

If Native American cultural materials or historic resources are encountered, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a Secretary of the Interior-qualified archaeologist shall examine the find and record the site, including field notes, measurements, and photography, and document the find using the California Department of Parks and Recreation 523 series forms. The archaeologist shall make recommendations regarding eligibility as a Candidate City Landmark and/or a California Historical Resource, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-

foot radius can resume once these steps are taken and the Director of Community Development has concurred with the recommendations.

Data recovery methods may include, but are not limited to, backhoe trenching, shovel test units, hand auguring, and hand-excavation. The techniques used for data recovery shall follow the protocols identified in the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan. Data recovery shall include excavation and exposure of features, field documentation, and recordation.

CUL-6: Human Remains

If human remains are discovered during the preliminary field investigation, excavation and/or grading, building, or other construction activities at the site, all activity within a 50-foot radius of the find will be stopped. The Santa Clara County Coroner will be notified and shall determine whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC) immediately. Once NAHC identifies the most likely descendants, the descendants will make recommendations regarding treatment and disposition with appropriate dignity, which will be implemented in accordance with section 15064.5(e) of the California Environmental Quality Act Guidelines. All actions taken under this mitigation measure shall comply with Health and Human Safety Code, section 7050.5(b).

CUL-7: Site Security

At the discretion of the City of Santa Clara's Director of Community Development, site fencing shall be installed on-site during the preliminary field investigation, grading, building, or other construction activities to avoid destruction and/or theft of potential cultural resources. The responsible qualified archaeologist, in consultation with a qualified Native American monitor, registered with the Native American Heritage Commission (NAHC) with an interest in the city of Santa Clara and that is traditionally and culturally affiliated with the geographic area, shall advise the Director of Community Development as to the necessity for a security guard. The purpose of the security guard shall be to ensure the safety of any potential cultural resources (including human remains) that are left exposed overnight. The Director of Community Development shall have the final discretion to authorize the use of a security guard at the project site.

CUL-8: Closing Cultural Resources Report

Once all analyses and studies required by the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan (Plan) have been completed, the project applicant, or representative, shall prepare a closing cultural resources report summarizing the results of the preliminary field investigation, data recovery activities and results, and compliance with the Plan during all demolition, grading, building, and other construction activities. The report shall document the results of field and laboratory investigations and shall meet the Secretary of the Interior's Standards for Archaeological Documentation. The contents of the report shall be consistent with the protocol included in the project-

specific Cultural Resources Treatment Plan. The report shall be submitted to the City of Santa Clara's Director of Community Development for review and approval prior to issuance of any certificates of occupancy (temporary or final). Once approved, the final documentation shall be submitted to the Northwest Information Center at Sonoma State University, as appropriate.

CUL-9: Curation

Upon completion of the closing cultural resources report required by **CUL-8**, all recovered archaeological materials not identified as tribal cultural resources by the Native American monitor, shall be transferred to a long-term curation facility. Any curation facility used shall meet the standards outlined in the National Park Service Curation of Federally Owned and Administered Archaeological Collections (36 CFR 79). The project owner shall notify the City of Santa Clara's Director of Community Development of the selected curation facility prior to the issuance of any certificates of occupancy (temporary or final). To the extent feasible, and in consultation with the Native American representative, all recovered Native American/tribal cultural resources and artifacts shall be reburied on-site in an area that is unlikely to be disturbed again. Treatment of materials to be curated shall be consistent with the protocols included in the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan. All archaeological materials recovered during the data recovery efforts shall be cleaned, sorted, catalogued, and analyzed following standard archaeological procedures, and shall be documented in a report submitted to the City of Santa Clara's Director of Community Development and the Northwest Information Center (NWIC).

4.5.4 References

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4.6 Energy and Energy Resources

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the project specific to energy and energy resources.

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

Environmental checklist established by CEQA Guidelines, Appendix F.

4.6.1 Environmental Setting

The project would consist of a four-story data center building, utility substation, two-story exterior generator equipment yard, surface parking and landscaping, and recycled water pipeline. The generator yard would house 32 3 megawatt (MW) diesel-fueled backup generators (gensets), of which, eight gensets would be redundant. The gensets would be used to provide backup power to support an uninterruptible power supply exclusively for the project (GI Partners 2022a, Section 2.2.4). The gensets would serve the data center only during emergency outages when electric service provided by Silicon Valley Power (SVP), via Pacific Gas & Electric Company (PG&E) transmission lines is interrupted. The backup generators would be electrically isolated from the PG&E electrical transmission grid with no means to deliver electricity offsite.

The gensets would each be a Cummins QSK95 (Tier 4 compliant) with a peak rated output capacity of 3 MW and a continuous, steady-state output capacity of 2.25 MW, and fuel consumption rate of 207 gallons per hour (gal/hr) at full load (GI Partners 2022c, Appendix A). Staff has verified the output capacity and rate of fuel consumption of these gensets from their product sheets (Cummins 2022). The maximum electrical load requirement of the data center would be 72 MW, which includes the electrical power load of the information technology (IT) servers, the cooling load of the data center building, as well as the facility's ancillary loads. See **Section 3.0 Project Description** for further information. For the purposes of testing and maintenance, only one genset would run at any given time.

Regulatory Background

Federal

Energy Star and Fuel Efficiency. At the federal level, energy standards set by the United States Environmental Protection Agency (EPA) apply to numerous consumer products and appliances. The EPA also sets fuel efficiency standards for automobiles and other modes of transportation.

State

California 2022 Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Standards Code, California Code of Regulations, Title 24. The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11) applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires the installation of energy- and water-efficient indoor infrastructure.

Senate Bill 100—The 100 Percent Clean Energy Act of 2018. Senate Bill (SB) 100 (De León, Chapter 312, Statutes of 2018) requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. This requirement applies to the SVP program, which would be the primary source of energy supply for the project. The bill also requires the California Public Utilities Commission (CPUC), California Energy Commission, and State Air Resources Board to utilize programs authorized under existing statutes to meet the state policy goal of 100 percent of total retail sales of electricity in California provided by eligible renewable energy resources and zero-carbon resources by December 31, 2045.

Local

City of Santa Clara Climate Action Plan. The City of Santa Clara's (City) Climate Action Plan (CAP) was adopted on December 3, 2013, and updated in June 7, 2022. It specifies strategies and measures to be taken for several focus areas, one of which is energy efficiency. To achieve the goals set in the CAP, the City adopted some policies in the City of Santa Clara 2010-2035 General Plan (General Plan), as discussed below.

City of Santa Clara General Plan 2010-2035. The General Plan was adopted by the Santa Clara City Council in November 2010. Applicable General Plan Policies and Actions regarding energy are detailed in Chapter 5.10.3 – Energy Goals and Policies and are summarized below:

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

- Policy 5.10.3-P4: Encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities.
- Policy 5.10.3-P5: Reduce energy consumption through sustainable construction practices, materials, and recycling.
- Policy 5.10.3-P6: Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.
- Policy 5.10.3-P8: Provide incentives for LEED certified or equivalent development.

The project would be required to comply with the applicable provisions in the City's General Plan and zoning ordinance, as verified by the City's design review process.

4.6.2 Environmental Impacts

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

Construction

Less Than Significant Impact. Construction activities would consume nonrenewable energy resources, primarily fossil fuels (oil, gasoline, and diesel), for construction equipment and vehicles. It is anticipated that these nonrenewable energy resources would be used efficiently during construction activities and would not result in the long-term significant depletion of these energy resources or permanently increase the project's reliance on them.

The project would implement measures to minimize the idling of construction equipment and would require all such equipment to be maintained and properly tuned (see **Section 4.3 Air Quality** for further discussion). This would ensure that fuel consumed during construction would not be wasted through unnecessary idling or the operation of poorly maintained equipment, and not add to unnecessary air emissions. Additionally, as a requirement by the City's construction and demolition permit, the project would participate in the City's Construction & Demolition Debris Recycling Program by recycling or diverting at least 65 percent of materials generated for discards by the project to reduce the amount of demolition and construction waste going to the landfill. Diversion saves energy by reusing and recycling materials for other uses (instead of landfilling materials and using additional nonrenewable resources).

Therefore, the construction phase of the project would create a less-than-significant impact on local and regional energy supplies and a less-than-significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

Operation

Less Than Significant Impact. The total number of hours of operation for reliability purposes (i.e., readiness testing and maintenance) for the gensets would be limited by the data center to no more than 50 hours per genset annually (GI Partners 2022a, Section 2.2.13). The primary fuel for the gensets would be renewable diesel, with ultra-low sulfur diesel (USLD or conventional) as backup fuel (GI Partners 2023d). Renewable diesel is a direct replacement alternative to conventional diesel fuel for the project's gensets. It is not a fossil fuel and is made of nonpetroleum renewable resources (vegetable oil or other biomass feedstock such as wood, agricultural waste, garbage, etc.). Renewable diesel is produced through various thermochemical processes, such as hydrotreating, gasification, and pyrolysis. For informational purpose, it is noted that renewable diesel is not the same as biodiesel and has different fuel properties than biodiesel. Biodiesel is produced through transesterification, which is a chemical process that converts fats and oils into fatty acid methyl esters. (See **Section 5.0 Alternatives** for further discussion).

The total quantities of renewable diesel or ULSD diesel fuel used for all the gensets operating at full load would be approximately 7,900 barrels per year (bbl/yr).[1] California has a renewable diesel and ULSD fuel supply of approximately 6,300,000 bbl/yr[2] and 310,000,000 bbl/yr[3], respectively. The project's use of fuel constitutes a small fraction of the renewable diesel and ULSD's available resources (less than 0.13 and 0.0025 percent, respectively)—the supply from the combination of these two resources is more than sufficient to meet the project's necessary demand. Moreover, the current supply of renewable diesel does not account for more refineries that are coming online and any future and import supply would bolster renewable diesel's available resource.

Since the project would use renewable diesel, with ULSD as backup supply, the impacts from the project's use of fuel on energy resources would be less than significant.

It is important to note that maintenance and readiness testing of the gensets are crucial to the project's viability. The most important data center criterion is reliability. Crucial public services, such as the 911, Offices of Emergency Management, and utility infrastructure, are increasingly using data centers for their operation. The reliability and data security requirements of a data center would be compromised by limiting or reducing fuel consumption for maintenance and readiness testing. This includes both the primary and redundant gensets. Even though the redundant gensets are purposed to provide backup service to the primary gensets, their operational reliability is equally important, and they are designed to start up at the same time as the primary gensets during emergency operations, with each genset running at 75 percent capacity (GI Partners

1 Calculated as: (207 gal/hr x 50 hours per year x 32 generators) = 331,200 gallons per year = 7,886 bbl/yr.

2 This is the annual production of 265,000,000 gallons obtained from the U.S. Energy Information Administration's U.S. Renewable Diesel Fuel and Other Biofuels Plant Production Capacity.

3 This is the sum of the annual production of 108,657,000 bbl and available stocks of 202,075,000 bbl obtained from the Energy Commission's Weekly Fuels Watch Report for 2022 (latest annual report available).

2022a, Section 2.2.5.1). If any of the primary gensets fails to operate, a redundant one must be immediately ready to run to take up the lost load. So, it is crucial that the redundant gensets be regularly tested and maintained according to the same testing and maintenance requirements as the primary ones and as prescribed by the manufacturer's warranty conditions. The use of diesel fuel for the gensets for readiness testing and maintenance would not be wasteful, inefficient, or unnecessary.

The gensets would use diesel and lubricating oils. However, the use of the standby gensets for emergency purposes would be limited to times when there is an interruption of SVP's delivery of electric service or other rare emergency that would require the facility to switch to genset use. Under emergency conditions, defined as the loss of electrical power to the data center, which are infrequent and short-duration events, the gensets could operate and use diesel fuel, as necessary, to maintain data center operations. Data centers, such as this one, could voluntarily participate in CPUC's Emergency Load Reduction Program, in which case, they would disconnect from the grid and use their on-site generators to supply their own electricity in the event of an energy shortage emergency. However, based on data between 2001 and 2020, energy shortages are rare events. Such events have not impacted SVP customers directly and staff expects their effects to decrease over time; see **Appendix B** for more discussion.

The Cummins generator models selected for this project have an efficiency rating comparable to other Tier 4 commercially available diesel-fueled generators of similar generating capacity.

Power Usage Effectiveness (PUE) is a metric used to compare the energy efficiency of facilities that house computer servers. It is a common metric for determining how effectively a data center's infrastructure systems can deliver power to the computer systems it houses. PUE was published in 2016 as a global standard under the International Organization for Standardization, the International Electrotechnical Commission, as well as the European Standards (ISO 20160, European Standards 2016). It is defined as the ratio of total facility energy draw (including the facility's mechanical and electrical loads) to IT server electrical power draw (PUE = total facility source energy ([including the IT source energy]/IT source energy). This approach to calculating a data center's energy efficiency is similar to the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) Energy Standard for Data Centers (ASHRAE 90.4). However, there is a notable difference: ASHRAE 90.4, which intends to tackle and regulate poorer performers, calculates energy efficiency by providing an alternative path that allows tradeoffs between mechanical and electrical loads, particularly within existing, older data centers, while the PUE is a more appropriate path to determining a new data center's energy efficiency.

A PUE of 2.0 means that the data center must draw 2 watts of electricity for each watt of power consumed by the IT server equipment. While the PUE is always greater than 1, the closer it is to 1 the greater the portion of the power drawn by the facility that goes to the IT server equipment.

The PUE has been used as a guideline for assessing and comparing energy and power efficiencies associated with data centers since 2007 (ASHRAE 2016). It must be noted that the PUE metric was designed to compare facilities of similar size and within similar climatic conditions. PUE factors started around 2.0, but values have since been migrating down to 1.25 or lower, demonstrating a significant improvement in efficient energy usage over the years. A facility with a PUE of 1.5-2.0 is considered "efficient" while one with a PUE of 1.2-1.5 is considered "very efficient."

The peak PUE for the project would be 1.50, and its annual average PUE would be 1.25 (GI Partners 2022a, Section 3.6.2.1). The project's peak operation PUE estimate is based on design assumptions and represents the worst case; that is, the hottest day with all server bays occupied and all servers operating at 100 percent capacity.

The project would be constructed in accordance with the 2022 California Green Building Standards Code and would include green building measures to reduce energy consumption. Examples of these measures include:

- Utilizing lighting control to reduce energy usage; and
- Air economization[4] integrated into the central air handling system for building cooling.

The project's consumption of energy resources during operation would not be wasteful, inefficient, or unnecessary. Project operation would have a less-than-significant adverse effect on local or regional energy supplies and energy resources.

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

Construction and Operation

No Impact. During operation, the project would use energy resources in SVP's portfolio of resources. SVP's 2018 Integrated Resource Plan identifies that it expects to exceed 50 percent of eligible renewable resources by 2030 (SVP 2018). SVP's 2021 non-residential power mix was composed of approximately 27 percent eligible renewable, 6.7 percent large hydroelectric, 34.3 percent nonrenewable, and 32 percent unspecified sources of power (SVP 2023). In addition, SVP offers customers 100 percent carbon-free renewable electricity through the Green Power Standard (SVP 2023).

In accordance with the City's CAP (B-1-7), the project would be required to participate in SVP's Green Power Standard operating on 100 percent carbon-free energy.

Therefore, the project will not obstruct SVP's compliance with a state plan for renewable energy.

4 An air economizer is a ducting arrangement, including dampers, linkages, and an automatic control system that allows a cooling supply fan system to supply outside air to reduce or eliminate the need for mechanical cooling.

In addition, the project's use of ULSD as a backup fuel for the gensets' primary fuel would not obstruct or inhibit the state from achieving its energy-related goals. As previously mentioned, the gensets would operate only during routine testing and maintenance (limited to 50 hours per genset), and in the rare case of emergencies to serve the project and not the wider electric grid. See **Sections 4.3 Air Quality and 4.8 Greenhouse Gas** for more discussion.

The project, through energy-efficient design, use of renewable diesel fuel, and renewable electricity use from SVP, its primary electricity source, would neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency, and, therefore, would have no impact on those plans.

4.6.3 Mitigation Measures

None required.

4.6.4 References

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4.7 Geology and Soils

This section describes the environmental setting and regulatory background and discusses impacts associated with the construction and operation of the project with respect to geology and soils.

GEOLOGY AND SOILS Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. 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.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on geologic units 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?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2012), creating substantial direct or indirect risks to life or property?*	☐	☐	☒	☐
e. 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 waste water?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

*Geology and Soils question (d) reflects the current 2022 California Building Code (CBC), effective January 1, 2022, which is based on the International Building Code (2021).
Environmental checklist established by CEQA Guidelines, Appendix G.

4.7.1 Environmental Setting

Analysis of existing data included reviews of publicly available literature, maps, air photos, and documents presented with the application and subsequent responses to Energy

Commission staff data requests. An online database search was performed to identify previously reported paleontological resources near the project site. The geologic map review of the project area included maps published by the U.S. Geological Survey (Wesling and Helley 1989 and Helley et al. 1994). A paleontological record search of the University of California Museum of Paleontology, Berkeley online paleontological database was conducted for the project areas, including a 10-mile buffer zone surrounding the proposed data center (UCMP 2023).

Regional Geologic Setting

The proposed project is situated in the Coast Ranges geomorphic province southern ranges section (**Figure 4.7-1**). The northern and southern Coast Ranges are separated by a depression containing the San Francisco Bay. The Coast Ranges contain many elongate ridges and narrow valleys that are approximately parallel to the coast, although the coast trends slightly northward more than the ridges and valleys (Norris and Webb 1990). The differences between the two ranges occur because the northern ranges lie east of the San Andreas Fault zone, whereas the southern ranges predominantly lie to the west (Norris and Webb 1990). The northern ranges and portions of the southern ranges are generally underlain by strongly deformed Franciscan subduction complex rocks, and the areas west of the San Andreas Fault zone, in both the northern and southern ranges, are generally underlain by a strongly deformed granitic-metamorphic complex known as the Salinian block. The basement rock beneath the project site, which lies east of the San Andreas Fault zone consists of Franciscan Complex rocks (Norris and Webb 1990).

Local Geology

The project site is located in the Santa Clara Valley, a relatively broad alluvial basin, bounded by the San Francisco Bay to the north, the Santa Cruz Mountains to the west and southwest, and the Diablo Mountain Range to the east and southeast. The Santa Clara Valley basin contains alluvial deposits generally composed of poorly consolidated and interlayered clays, silts, sands, and gravels derived from the Diablo Range and the Santa Cruz Mountains.

The project site is underlain by Holocene age (less than 11,000 years old) Natural Levee deposits (Qhl). The levee deposits are generally described as loose, moderate- to well-sorted sandy and clayey silt grading to sandy or silty clay. Holocene Basin deposits (Qhb) are mapped southeast and west of the site. These deposits generally consist of organic rich clay to very fine silty clay occupying the lower topographic positions between Holocene levee deposits. (Wesling and Helley 1989)

Cornerstone Earth Group (Cornerstone), the geotechnical consultant for the project, prepared a preliminary geotechnical report for the project in February 2023 (GI Partners 2022a). Their field exploration consisted of five cone penetration tests (CPTs). The CPTs were advance to depths of 50 to 121½ feet. Seismic shear wave velocity measurements were collected from CPT-2.

○ City/Town/Populated Place

E-Eureka
R-Redding
S-Sacramento
SF-San Francisco
M-Monterey
F-Fresno
B-Bakersfield
SB-Santa Barbara
LA-Los Angeles
PS-Palm Springs
N-Needles
K-Kelso
SD-San Diego

Figure 4.7-1
Geomorphic Provinces

Sources: California Department of Conservation, California Geological Survey, 2002

Below the existing surface pavements the CPTs generally encountered interbedded layers of medium stiff to stiff clay with variable amounts of silt and sand, and medium dense to very dense sand with varying amounts of silt and gravels to the maximum depth explored of 121½ feet, where practical refusal was encountered (GI Partners 2023b).

The site is relatively flat thus erosion hazards are limited and there are no landslide hazards. There are also no unique geologic features on or adjacent to the project site.

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They range from mammoth and dinosaur bones to impressions of ancient animals and plants, trace remains, and microfossils. These are valued for the information they yield about the history of the earth and its past ecological settings. The California Public Resources Code, section 5097.5, specifies that unauthorized removal of a paleontological resource is a misdemeanor.

There are no known paleontological resources within the project site. A search of the University of California Museum of Paleontology database failed to identify any paleontological resources in the vicinity of the site (GI Partners 2022e, UCMP 2023). Site grading is anticipated to include minor earthwork cuts and fills on the order of 1 to 5 feet; however, soil disturbance up to 16 feet deep is anticipated for construction of the recycled water pipeline and utility interconnects (GI Partners 2022f, GI Partners 2023b). The proposed 4-story data center building associated with the project would need to be supported on shallow foundations overlying ground improvements or a deep foundation system. If a deep foundation system is used, conventionally drilled, cast-in-place augercast piles would be anticipated. The depths of the piles would be determined during the final geotechnical design; however, similar data centers in the area have installed piles to depths of up to 80 feet below the existing ground surface. These ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources.

Groundwater

Groundwater was inferred from CPT pore pressure measurements at depths ranging from about 4 to 12 feet below current grades. Historic high groundwater maps prepared by the California Geologic Survey (CGS) for the San Jose West 7.5-Minute Quadrangle (CGS 2002a) indicate the high groundwater to be approximately 5 to 10 feet below the existing ground surface (GI Partners 2023b).

Based on the above, Cornerstone recommended a design groundwater depth of 6 feet be used for preliminary planning. Fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors. Seasonal and high groundwater elevations should be further evaluated as part of the design-level geotechnical investigation (GI Partners 2023b).

Seismicity and Seismic Hazards

While seismologists cannot predict earthquake events, geologists from the U.S. Geological Survey updated earlier estimates from their 2014 Uniform California Earthquake Rupture Forecast (Version 3; UCERF3) publication in 2015. The estimated probability of one or more magnitude 6.7 earthquakes (the size of the destructive 1994 Northridge earthquake) expected to occur somewhere in the San Francisco Bay Area has been revised (increased) to 72 percent for the period 2014 to 2043 (Aagaard et al. 2016). The faults in the region with the highest estimated probability of generating damaging earthquakes between 2014 and 2043 are the Hayward (33%), Calaveras (26%), and San Andreas Faults (22%) (GI Partners 2023b) (**Figure 4.7-2**).

Table 4.7-1 below presents the state-considered active faults within 25 kilometers of the site (CGS 2010).

TABLE 4.7-1 ACTIVE FAULTS WITHIN 25 KILOMETERS OF THE PROJECT SITE

Fault Name	Distance	
	(miles)	(kilometers)
Monte Vista-Shannon	6.5	10.5
Hayward (Southeast Extension)	7.5	12.1
Hayward (Total Length)	10.0	16.1
San Andreas (1906)	10.1	16.3
Calaveras	10.9	17.5

Source: GI Partners 2023b

The Silver Creek fault is mapped approximately 3¼ miles northeast of the site. This fault has not been documented as active during the Quaternary age; however, renewed fault rupture hazard studies are currently in progress. The site is not located within a state-designated Alquist Priolo Earthquake Fault Zone and no known surface expression of fault traces is thought to cross the site (GI Partners 2023b).

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. Cornerstone estimated a site modified peak ground acceleration (PGA^{-}_{M}) for analysis using a value equal the site amplification factor at the PGA (F_{PGA}) x PGA, as allowed in the 2022 edition of the California Building Code (CBC) when an exception has been taken per American Society of Civil Engineers (ASCE) 7-16, Section 11.4.8 (ASCE 2017). For Cornerstone's preliminary analysis they have assumed the structural engineer would take an exception as allowed per ASCE 7-16 Section 11.4.8. If an exception is not confirmed as allowable by the structural engineer, Cornerstone would perform a Ground Motion Hazard Analysis per Section 21.2 of ASCE 7-16 as part of the final geotechnical investigation. For Cornerstone's preliminary liquefaction analysis they used a PGM_M of 0.551g (GI Partners 2023b).

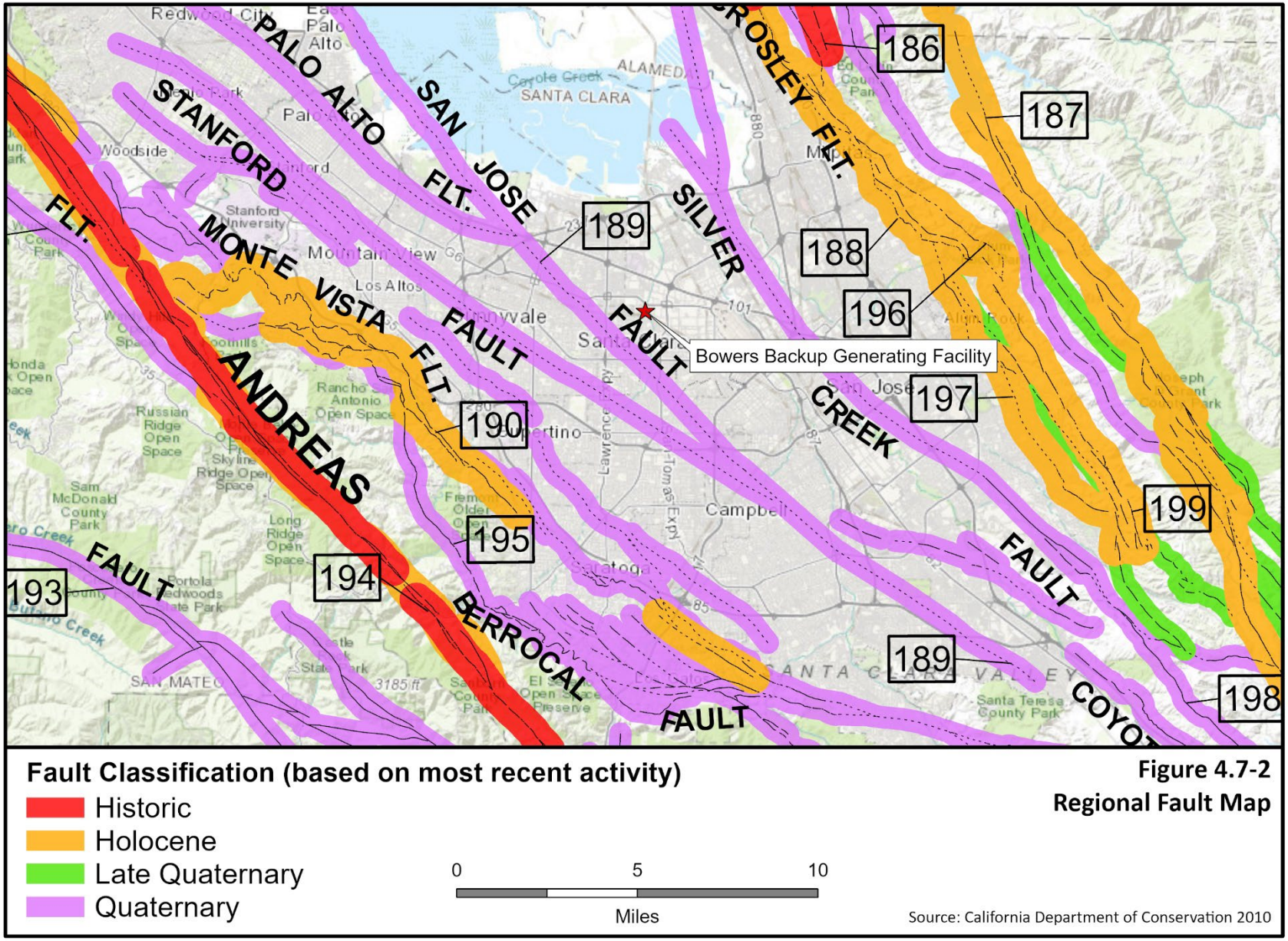

Figure 4.7-2
Regional Fault Map

Liquefaction

During strong ground shaking, loose, saturated, cohesionless soils can experience a temporary loss of shear strength and act as a fluid. This phenomenon is known as liquefaction. Liquefaction depends on the depth to water, grain size distribution, relative soil density, degree of saturation, and intensity and duration of the earthquake. Soils most susceptible to liquefaction are loose, uniformly graded, saturated, fine-grained sands that lie close to the ground surface (Youd et al. 2001).

The site is located within a state-designated Liquefaction Hazard Zone (CGS 2002a). Groundwater has been estimated at depths ranging from approximately 4 feet to 12 feet below the current grade (GI Partners 2023b). In addition, according to the Association of Bay Area Governments Earthquake Liquefaction Susceptibility Map (ABAG 2020), the site is in an area considered to have a moderate susceptibility to earthquake-induced liquefaction.

Cornerstone performed a preliminary liquefaction analysis based on the CPTs. Their analysis indicates that several subsurface layers could potentially experience liquefaction triggering that could result in post-liquefaction total settlement at the ground surface ranging from about ¼ to ¾ inch based on the Yoshimine (2006) method. Differential settlements are anticipated to be on the order of 0.5-inch or less over a horizontal distance of 30 to 40 feet. The potential for liquefaction-induced settlement should be further evaluated as part of the design-level geotechnical investigation (GI Partners 2023b).

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. As failure tends to propagate as block failures, it is difficult to analyze and estimate where the first tension crack would form.

There are no open faces within a distance considered susceptible to lateral spreading; therefore, the potential for lateral spreading to affect the site is considered low (GI Partners 2023b).

Tsunami

Tsunamis are described as ocean waves or similar waves usually created by undersea fault movement or by a coastal or submerged landslide. Tsunamis may be generated at great distances from shore (far field events) or nearby (near field events). Waves are formed, as the displaced water moves to regain equilibrium, and radiates across the open water, similar to ripples from a rock being thrown into a pond. When the waveform reaches the coastline, it quickly raises the water level, with water velocities as high as 15

to 20 knots. The water mass, as well as vessels, vehicles, or other objects in its path create tremendous forces as they impact coastal structures.

A tsunami originating in the Pacific Ocean would lose much of its energy passing through San Francisco Bay. Based on the mapping of tsunami inundation potential for the San Francisco Bay Area by CGS (CGS 2023), areas most likely to be inundated are marshlands, tidal flats, and former bay margin lands that are now artificially filled, but are still at or below sea level, and are generally within 1.5 miles of the shoreline. The site is approximately 6.5 miles inland from the San Francisco Bay shoreline and is approximately 43 to 48 feet above mean sea level. Therefore, the potential for inundation due to tsunami or seiche is considered low (GI Partners 2023b).

Regulatory Background

Federal

Federal Paleontological Laws, Ordinances, Regulations, and Standards. The National Environmental Policy Act as amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258 § 4(b), September 13, 1982) recognizes the continuing responsibility of the federal government to "preserve important historic, cultural, and natural aspects of our national heritage..." (Sec. 101 [42 U.S.C. § 4321]) (#382). This can be interpreted to refer to paleontological as well as cultural resources.

State

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

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

California Building Standards Code. The CBC prescribes standards for constructing safer buildings. The CBC contains provisions for earthquake safety based on factors

including occupancy type, soil and rock profile, ground strength, and distance to seismic sources. The CBC requires that a site-specific geotechnical investigation report be prepared for most development projects to evaluate seismic and geologic conditions, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. The CBC is updated every three years; the current version is the 2022 CBC.

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

State Paleontological Laws, Ordinances, Regulations, and Standards. California Public Resources Code, section 5097.5, specifies that unauthorized removal of a paleontological resource is a misdemeanor.

The California Environmental Quality Act (CEQA) encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a project and to make decisions based on the findings of those analyses. CEQA includes, in its definition of historical resources, any object or site that "has yielded, or may be likely to yield, information important in prehistory" (California Code Regulations, tit. 14, § 15064.5(a)(3)(D)), which is typically interpreted by professional scientists as including fossil materials and other paleontological resources. More specifically, the destruction of a "unique paleontological resource or site or unique geologic feature" may be a significant impact under CEQA (CEQA Guidelines Appendix G.VII. (f)).

Local

Santa Clara General Plan Staff reviewed the City of Santa Clara General Plan (Santa Clara 2010) for provisions relevant to geology and soils applicable to the project. Section 5.6.3 of the general plan identifies protection of paleontological resources as a goal of the City and policies 5.6.3-P1 through P6 outline how the protection of paleontological resources would be achieved. Section 5.10.5 identifies policies related to geotechnical engineering.

- 5.6.3-G1: Protection and preservation of cultural resources, as well as archaeological and paleontological sites.
- 5.6.3-G2: Appropriate mitigation if human remains, archaeological resources or paleontological resources are discovered during construction activities.
- 5.6.3-P1: Require that new development avoid or reduce potential impacts to archaeological, paleontological, and cultural resources.
- 5.6.3-P2: Encourage salvage and preservation of scientifically valuable paleontological or archaeological materials.

- 5.6.3-P3: Consult with California Native American tribes prior to considering amendments to the City's General Plan.
- 5.6.3-P4: Require that a qualified paleontologist/archaeologist monitor all grading and/or excavation if there is a potential to affect archeological or paleontological resources, including sites within 500 feet of natural water courses and in the Old Quad neighborhood.
- 5.6.3-P5: In the event that archaeological/paleontological resources are discovered, require that work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist.
- 5.6.3-P6: In the event that human remains are discovered, work with the appropriate Native American representative and follow the procedures set forth in State law.
- 5.10.5-P5: Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction, and subsidence dangers.
- 5.10.5-P6: Require that new development is designed to meet current safety standards and implement appropriate building codes to reduce risks associated with geologic conditions.
- 5.10.5-P7: Implement all recommendations and design solutions identified in project soils reports to reduce potential adverse effects associated with unstable soils or seismic hazards.

Santa Clara City Code

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

4.7.2 Environmental Impacts

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. 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.

Construction

Less Than Significant Impact. The probability that construction of the proposed project would have an impact on the risk of loss, injury, or death involving rupture of an earthquake fault during construction is remote. The project site is located within the seismically active San Francisco Bay region, and the nearest historically active fault, the Monte Vista-Shannon fault zone, is approximately 6.5 miles to the southwest. No active or potentially active faults are known to pass directly beneath the site. Due to the distance of faults from the site and the absence of known faults within or near the site, development of the project would not expose people or buildings to known risks of fault rupture. Therefore, the impact would be less than significant.

Operation

Less Than Significant Impact. The probability that operation or maintenance of the proposed project would have an impact on the risk of loss, injury, or death involving rupture of an earthquake fault during operation is remote. There are no mapped Alquist-Priolo Special Studies Zones for active faults crossing the project site. As described above, the zone of damage is limited to a relatively narrow area along either side of the fault. Thus, the impact would be less than significant.

ii. Strong seismic ground shaking?

Construction

Less Than Significant Impact. Earthquakes along nearby active faults in the region could cause strong ground shaking at the site (GI Partners 2023b). Ground motion intensity and the resulting damage depend on the characteristics of the generating fault, distance from the fault and rupture zone, earthquake magnitude, earthquake duration, and site-specific geologic conditions. Project design, specifically the building foundation, would include an assessment of the potential impacts from strong seismic ground shaking using a site-specific design-level seismic event. Seismic hazards would be minimized, to the extent feasible, by conformance to the applicable seismic design criteria of the CBC (CBC 2022). Furthermore, recommendations for ground improvement to further reduce, to the extent feasible, the ground settlement hazard at the site would be incorporated into the project design (GI Partners 2023b).

A project-specific geotechnical engineering report would be submitted to the City building official for review and approval prior to issuance of a building permit, and project construction would be required to comply with all report recommendations. By implementing the CBC seismic design criteria (CBC 2022), as well as project-specific recommendations in the final geotechnical engineering report, the project would not expose people or property, directly or indirectly, to significant impacts associated with seismic ground shaking. Therefore, the impact would be less than significant.

Operation

Less Than Significant Impact. During the operation and maintenance of the proposed project, the facility could be subject to strong seismic ground shaking (GI Partners 2023b). However, with implementation of the seismic design guidelines per the CBC (CBC 2022), as well as project-specific recommendations in the final geotechnical engineering report, the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking. Therefore, the impacts of the project on the safety of people or structures from strong seismic ground-shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Construction

Less Than Significant Impact. Since the site is located within a state-designated Liquefaction Hazard Zone, there is potential for soil layers at the site to liquefy during a seismic event. Preliminary analysis performed by Cornerstone indicates that liquefaction-induced settlement at the project site could be up to 0.75 inch across the site (GI Partners 2023b). The proposed structures would be designed and constructed in accordance with applicable provisions of the CBC (CBC 2022) that are designed to address liquefaction concerns to the extent feasible.

In addition, as discussed under CEQA criterion "a", a project-specific design included within a geotechnical engineering report would be provided to the City of Santa Clara Building Division for review and approval prior to the issuance of a building permit. The project would be required to comply with all recommendations in this report when constructing the project. Therefore, with the implementation of the seismic design criteria for ground failure and project-specific recommendations in the final geotechnical engineering report, the project would not expose people or property to any significant direct or indirect impacts associated with geologic or seismic conditions onsite, including liquefaction and impacts would be less than significant.

Operation

Less Than Significant Impact. During the operation and maintenance of the proposed project, the facility could be subject to strong seismic ground shaking (GI Partners 2023b). However, with implementation of seismic design guidelines per the CBC (CBC 2022), and project-specific recommendations in the final geotechnical engineering report, the project would not expose people or property, directly or indirectly, to significant impacts associated with seismic ground shaking, including ground failure, liquefaction, or seismically induced subsidence. Therefore, risks to people or structures from strong seismic ground-shaking would continue to be less than significant.

iv. Landslides?

Construction

No Impact. As the project site is relatively flat with no open faces or slopes near the site, there is low potential for landslides and, therefore, no direct or indirect significant impacts associated with landslides are expected to occur.

Operation

No Impact. As the project site is relatively flat with no open faces or slopes near the site, there is low potential for landslides. Construction of the project would not change the general surface morphology of the site, and operation and maintenance at the site would not change the general surface morphology of the site. Therefore, no direct or indirect significant impacts associated with landslides are expected to occur.

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

Construction

Less Than Significant Impact. Construction activities associated with the project (including excavation, trenching, and grading) would temporarily increase sedimentation and erosion by exposing soils to wind and runoff until construction is complete and new vegetation is established.

By complying with existing permits and other applicable laws and regulations, substantial soil erosion or loss of topsoil would not occur; and runoff from the project site would not violate the applicable waste discharge requirements or otherwise contribute to the degradation of stormwater runoff quality. Therefore, impacts related to erosion and loss of topsoil would be less than significant and no mitigation is required.

Operation

Less Than Significant Impact. Best Management practices (BMPs) for erosion and sedimentation control taken to comply with the NPDES permit would ensure the site would not include areas of exposed topsoil subject to erosion. Surface water runoff from the facility would not be expected to impact soil erosion or cause the loss of topsoil during project operation. Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary and small. Continuous operation and maintenance work would not result in increased erosion or topsoil loss and therefore, no significant impact associated with erosion or loss of topsoil would occur.

c. Would the project be located on geologic units 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?

Construction

Less Than Significant Impact. The project site and immediate surrounding area are not subject to landslides or lateral spreading. The project site is in a mapped liquefaction hazard zone. The project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. This is because the applicant is required to comply with the CBC plus any local amendments, which require that a final geotechnical report be prepared and the design of the building should adhere to the findings in the final report, as required by the CBC. Therefore, impacts associated with construction on geologic or soil units that are or could become unstable would be less than significant.

Operation

Less Than Significant Impact. Operation and maintenance activities would not materially change the surface runoff or geotechnical characteristics of the material beneath the project facilities. Thus, operation and maintenance activities would not introduce new soil stability hazards. Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary and likely small. The project would not expose people or property, directly or indirectly, to unstable geologic or soil units. Therefore, impacts associated with operation on geologic or soil units that are or could become unstable would be less than significant impact.

d. Would the project be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2012), creating substantial direct or indirect risks to life or property?

Construction and Operation

Less Than Significant Impact. Expansive soil behavior is a condition where clay soils react to changes in moisture content by expanding or contracting. Poorly drained soils have greater shrink-swell potential. Potential causes of moisture fluctuations include drying during construction, and subsequent wetting from rain, capillary rise, landscape irrigation, and type of plant selection. If untreated, expansive soils could damage future buildings and pavements on the project site.

The project site is located on expansive soil as defined in Section 1803.5.3 of the CBC. The project would be required to adhere to the CBC, which would reduce impacts related to expansive soils to a less than significant level. The policies of the City of Santa Clara 2010-2035 General Plan have been adopted for the purpose of avoiding or mitigating

environmental effects resulting from planned development within the city. Santa Clara General Plan Policy 5.10.5-P6 requires that new development be designed to meet current safety standards and implement appropriate building codes to reduce risk associated with geologic conditions. Therefore, with adherence to the CBC and City Building Codes the risks to people or structures from expansive soil would be less than significant.

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?

Construction and Operation

No Impact. The project would connect to an existing City-provided sanitary sewer connection, so the project site would not need to support septic tanks or alternative wastewater disposal systems (GI Partners 2022e). Therefore, there would be no impact to soils because of sanitary waste disposal from the project during construction or operation.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction and Operation

Less Than Significant with Mitigation Incorporated. The level of paleontological sensitivity at the project site is considered to be low at and near the ground surface within the alluvial deposits of Holocene age; however, older Pleistocene age sediments present at or near the ground surface at some locations have a high potential to contain these resources. These older sediments, often found at depths greater than 10 feet below the ground surface, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates (GI Partners 2022e). The project site is located in the Santa Clara Valley, an area known to have scientifically significant but widespread or intermittent fossil discoveries. While surficial sediments have been mapped as Holocene age, paleontological evidence indicates that Pleistocene age (2.6 million to 11,700 years before present) sediments may also be present at or near the surface. Five fossil sites have been found at or near the ground surface within two miles of the project site, especially along stream beds. However, the general area has been extensively developed over the last 50 years as part of the technology research and development area known as Silicon Valley.

The potential to disturb paleontological resources could occur during the construction activities requiring earth moving, such as grading, trenching, excavation for foundations, and installation of support structures, where native soil would be disturbed. The maximum depth of soil disturbance is estimated to vary between 3 and 16 feet below the existing grade for utility trenching (GI Partners 2022f) and if deep foundations are used, piles could extend 80 feet below the existing grade surface.

Ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources. The applicant proposed a measure to reduce impacts to unique paleontological resources or unique geologic features (PD GEO-1.1). This measure requires that in the event paleontological resources are discovered all work shall be halted within 50 feet of the find and a Paleontological Resource Mitigation Plan be prepared by a qualified paleontologist to address assessment and recovery of the resource. A final report documenting any found resources, their recovery, and disposition shall be prepared in consultation with the Director of Community Development and filed with the City and local repository. Staff reviewed this measure and finds it insufficient to reduce impacts to less than significant as there are no measures included to train workers to identify potential paleontological resources if encountered during construction activities thus resulting in damage or destruction to paleontological resources.

Staff proposes mitigation measure **GEO-1** which includes all of the above-mentioned mitigation measures proposed by the applicant, plus requires the development of a Worker Environmental Awareness Program (WEAP) to be implemented by a qualified paleontologist. The WEAP should include proper procedures (including training on the identification of paleontological resources and worker notification procedures) in the event fossil materials are encountered during construction. Staff concludes that with implementation of **GEO-1**, impacts to unique paleontological resources would be reduced to a less than significant level.

There are no unique geologic features on or adjacent to the project site, thus there would be no project impacts to such features.

Operation

No Impact. There is no potential to disturb paleontological resources during operations because no earth-moving activities would be required for operations. Occasional maintenance activities may require minor surface disturbance in the future, but such disturbance would be temporary, small, and most likely limited to the disturbance of fill. There would be no impact to paleontological resources during operation.

4.7.3 Mitigation Measures

GEO-1: Prior to the commencement of construction, the applicant shall secure the services of a qualified paleontological specialist. The specialist shall prepare a Worker Environmental Awareness Program (WEAP) to instruct site workers of the obligation to protect and preserve valuable paleontological resources for review by Santa Clara Community Development Department. This program shall be provided to all construction workers via a recorded presentation and shall include a discussion of applicable laws and penalties; samples or visual aids of resources that could be encountered; 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.

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 supervisors 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 will 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 Director or Director's designee of the Santa Clara Community Development Department for review and approval. The report and any fossil remains collected shall be submitted to a scientific institution with paleontological collections.

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4.8 Greenhouse Gas Emissions

This section describes the environmental and regulatory setting and discusses greenhouse gas (GHG) emissions impacts associated with the demolition/construction, direct "stationary source" emissions from emergency backup generators, and indirect and "non-stationary source" emissions from the operation of the project.

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

Environmental checklist established CEQA Guidelines, Appendix G.

4.8.1 Summary

The Bowers Data Center (BDC) and the associated Bowers Backup Generating Facility (BBGF) are collectively called "the project" in the analysis that follows. In this analysis, the California Energy Commission (CEC) staff concludes that, with the implementation of mitigation measures **GHG-1** and **GHG-2**, the project's potential GHG emissions impacts would be less than significant.

This section includes both quantitative and qualitative analyses of the project's three categories of GHG emissions: (1) emissions related to the construction/demolition phase of the project; (2) direct "stationary source" emissions from the operation of the emergency backup generators; and (3) indirect and "non-stationary source" emissions from the operation of the project, the vast majority of which are indirect emissions from the electricity consumed by the project.

For each category of GHG emissions, this section describes and calculates the emissions, identifies the threshold of significance that applies to the project's emissions source, and applies the applicable methodology or threshold of significance to determine if the project's GHG emissions impacts are less than significant.

Significance Criteria

California Environmental Quality Act (CEQA) Guidelines for GHG Emissions. With the enactment of Senate Bill 97 (Dutton, Chapter 185, Statutes of 2007), the Governor's Office of Planning and Research was required by July 1, 2009, to prepare, develop, and transmit to the Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. Those amendments to the

CEQA guidelines became effective March 18, 2010, and were subsequently updated in December 2018 to further address the analysis of GHG emissions, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects. (See CEQA Guidelines, § 15064.4, subd. (a))
- The focus of the lead agency's analysis should be on the project's effect on climate change, rather than simply focusing on the quantity of emissions and how that quantity of emissions compares to statewide or global emissions. (See CEQA Guidelines, § 15064.4, subd. (b))
- The impacts analysis of GHG emissions is global in nature and thus should be considered in a broader context. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions. (See CEQA Guidelines, § 15064.4, subd. (b))
- Lead agencies should consider a timeframe for the analysis that is appropriate for the project. (See CEQA Guidelines, § 15064.4, subd. (b))
- A lead agency's analysis must reasonably reflect evolving scientific knowledge and state regulatory schemes. (See CEQA Guidelines, § 15064.4, subd. (b))
- Lead agencies may rely on an adopted statewide, regional, or local plan in evaluating a project's GHG emissions. (See CEQA Guidelines, § 15064.4, subd. (b)(3))
- Lead agencies may analyze and mitigate the significant impact of GHG emissions as part of a larger plan for the reduction of greenhouse gases. (See CEQA Guidelines, §15183.5, sub. (a))
- A project's incremental contribution to a cumulative GHG emissions effect may be determined not to be significant and the effects of the project to not be cumulatively considerable if the project complies with the requirements of the GHG emissions reduction strategy. (See CEQA Guidelines, §§ 15064, sub. (h)(3); 15130, sub. (d); 15183, sub. (b))
- In determining the significance of a project's impacts, the lead agency may consider a project's consistency with the state's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is consistent with those plans, goals, or strategies. (See CEQA Guidelines, § 15064.4, subd. (b)(3))
- The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently account for the project's incremental contribution to climate change. (See CEQA Guidelines, § 15064.4, subd. (c))

The Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines include recommended thresholds of significance for determining whether projects would have significant adverse GHG impacts.

Construction/Demolition Emissions. For construction-related GHG emissions, the BAAQMD CEQA Guidelines do not identify a numerical GHG emissions threshold of significance, but instead recommend that those emissions should be quantified and disclosed. BAAQMD further recommends the incorporation of best management practices (BMPs) to reduce GHG emissions during construction, as feasible and applicable.

Direct Stationary Sources Emissions. For stationary sources, BAAQMD adopted in the BAAQMD CEQA Guidelines a numeric threshold of significance of 10,000 metric tons of carbon dioxide equivalent per year ($MTCO_2e/yr$) for projects that require permits from BAAQMD (BAAQMD 2017b, p. 2-4). However, the threshold of 10,000 $MTCO_2e/yr$ was based on the state's 2020 GHG target (Health and Saf. Code, § 38550), which is now superseded by the 2030 GHG target (Health and Saf. Code, § 38566), as enacted in California Global Warming Solutions Act of 2016 (Senate Bill 32, Pavley, Chapter 249, Statutes of 2016), and a 2045 target set forth in former Governor Brown's Executive Order B-55-18. In November 2021, BAAQMD staff was in the process of preparing and presenting to the BAAQMD board for approval an update to the CEQA GHG threshold of significance for stationary sources to 2,000 $MTCO_2e/yr$ or compliance with the California Air Resources Board's (CARB) cap-and-trade program, codified in Health and Safety Code, section 38562 (BAAQMD 2021b).

However, the BAAQMD staff has paused work on the stationary source thresholds to focus on updating thresholds for land use projects and plans[1]. The BAAQMD website states that after the project and plan level thresholds are adopted, which occurred in April 2022, BAAQMD staff would turn their attention to the stationary source threshold of significance and further investigate appropriate approaches.

In this analysis, in addition to the existing BAAQMD CEQA Guidelines threshold of significance of 10,000 $MTCO_2e/yr$, staff also evaluated the GHG impacts of the emergency backup generators with the consideration of the pending update to the BAAQMD CEQA GHG threshold of significance, under which the GHG impacts from the project's emergency backup generators would be considered to have a less-than-significant impact if emissions are below BAAQMD's proposed threshold of 2,000 $MTCO_2e/yr$. Staff identified mitigation that would reduce the level of GHG emissions from the emergency backup generators to below the existing applicable significance threshold and the proposed, pending significance threshold.

Indirect and Non-Stationary Source Emissions. Other project-related emissions from mobile sources, area sources, energy use, and water use would not be included for comparison to the stationary source threshold of significance, based on guidance in the BAAQMD CEQA Guidelines (BAAQMD 2017b).

Instead, in April 2022, the BAAQMD adopted updated thresholds of significance with the publication of *Justification Report: CEQA Thresholds for Evaluating the Significance of*

1 BAAQMD CEQA Thresholds and Guidelines Update website: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

Climate Impacts from Land Use Projects and Plans (BAAQMD 2022) to assist lead agencies when evaluating the indirect and "non-stationary" source emissions of land use development projects. Under the BAAQMD's 2022 CEQA thresholds of significance for land use projects, a CEQA lead agency can conclude that a project would not make a cumulatively considerable contribution to global climate change if the project is designed and built to be consistent with the requirements of either Option A or Option B of the BAAQMD thresholds. In Option A, projects must include, at a minimum, the project design elements of buildings and transportation. In Option B, projects must be consistent with a local GHG reduction strategy that meets the criteria under CA CEQA Guidelines Section 15183.5(b) (BAAQMD 2022, p.2). Because the proposed project includes a General Plan Amendment, it cannot rely on a GHG Reduction Strategy as outlined in Option B of the BAAQMD thresholds. As a result, the project's consistency with the requirements of Option A of the BAAQMD thresholds would be used to determine the significance of the project's operational GHG emissions (GI Partners 2022e, p. 141 and 142).

The City of Santa Clara Climate Action Plan 2022 (2022 CAP) is the latest update to the City of Santa Clara's (City) Climate Action Plan and is designed to meet the statewide GHG reduction targets for 2030 set by SB 32, and to achieve net carbon neutrality no later than 2045 by EO B-55-18 targets.

As a qualified Climate Action Plan, the 2022 CAP allows for tiering and streamlining of GHG analyses under CEQA. The 2022 CAP identifies existing City policies and regulations as well as new measures to be implemented by development projects in the areas of building/energy use, transportation & land use, materials & consumption, natural resources & water resources, and community resilience & wellbeing. Projects that comply with the policies and strategies outlined in the 2022 CAP and that are consistent with the General Plan land use designation on the project site would have a less than significant GHG impact (GI Partners 2022e, p. 140).

Construction/Demolition Emissions

As discussed in more detail under CEQA environmental checklist criterion "a," the applicant estimated that the maximum annual GHG emissions from construction sources would be approximately 256 $MTCO_2e$ during the estimated 2 years of construction, including demolition, site preparation, grading, and on-and-off-site construction (GI Partners 2022e, p. 138). Therefore, the project's short-term construction-related GHG emissions have been quantified and disclosed. In addition, the project would implement best management practices (BMPs), as specified in mitigation measure **AQ-1**, that would reduce construction-related GHG emissions. The project would also participate in the City's Construction & Demolition Debris Recycling Program to further reduce GHG emissions (GI Partners 2022e, Table 3.8-3 and Table 3.8-4). Staff concludes that the project's construction-related GHG emissions impacts would be less than significant.

Direct Stationary Source Emissions (Emergency Backup Generators)

The project's emergency backup generators would be stationary sources of direct GHG emissions from project operation. The emergency backup generators would emit GHG emissions mostly during readiness testing and maintenance and infrequently during short durations of emergency operation. The GHG emissions from the emergency backup generators are subject to the BAAQMD CEQA Guidelines GHG threshold of significance for stationary sources. Staff evaluated the GHG impacts of the emergency backup generators with the consideration of the existing GHG threshold of significance of 10,000 MTCO2e/yr and BAAQMD's proposed 2,000 MTCO2e/yr threshold.

BAAQMD CEQA Guidelines indicates that biogenic carbon dioxide (CO_2) emissions would not be included in the quantification of GHG emissions for characterizing the CEQA impact significance for a project (BAAQMD2017b, page 4-5). Accordingly, with the use of 100 percent renewable diesel, the project's GHG emissions from readiness testing and maintenance of the gensets would be exempt from the stationary source threshold per BAAQMD CEQA Guidelines (BAAQMD2017b, page 4-5). Therefore, staff expects that the GHG emissions from the gensets for routine readiness testing and maintenance would be less than significant.

Despite the exemption from the stationary source threshold, staff performed a quantitative estimation of the GHG emissions from readiness testing and maintenance of the gensets. With the assumption of 50 hours of readiness testing and maintenance per year per engine and the use of renewable diesel, staff estimates that the fuel-cycle GHG emissions from the gensets would be 1,083 $MTCO_2e/yr$[2], which is lower than the BAAQMD CEQA Guidelines' existing GHG threshold of significance of 10,000 $MTCO_2e/yr$. The fuel-cycle GHG emissions from the gensets would also be lower than BAAQMD's proposed 2,000 $MTCO_2e/yr$ threshold. As well, GHG emissions from the project would not exceed CARB's regulatory threshold level for required inclusion in and compliance with the cap-and-trade program, which is 25,000 $MTCO_2e/yr$.

The project's likelihood of operating the emergency backup generators for unplanned circumstances or emergency purposes is low and, if such operation did occur, it would be infrequent and of short duration (See **Appendix B**). Staff concludes that an estimate of 50 hours of emergency backup generator operation per year adequately accounts for both readiness testing and maintenance, and emergency operation, for any given year, even if ultra-low sulfur diesel is used during short emergency operation durations in the event of supply challenges or disruption in obtaining renewable diesel.

Staff concludes that with the implementation of mitigation measure **GHG-1**, the GHG emissions from the project's stationary sources would be less than significant. In addition, with the implementation of **GHG-1**, the project's stationary sources would not conflict

2 By using the total reduction rate of 68.18% from conventional diesel to renewable diesel.
3,405 $MTCO_2e/yr$ x (1-68.18%) = 1,083 $MTCO_2e/yr$

with plans, policies, or regulations adopted to achieve long-term GHG emissions reduction goals.

Indirect and Non-Stationary Source Emissions

The operation of the project would generate GHG emissions beyond those from the operation of the emergency backup generators, including offsite vehicle trips for worker commutes and material deliveries, and facility upkeep, including architectural coatings, consumer product use, landscaping, water use, waste generation, and electricity use. The GHG emissions from indirect and non-stationary sources are shown in **Table 4.8-4** under CEQA environmental checklist criterion "a."

The GHG impacts from the indirect and non-stationary sources would be considered to have a less-than-significant impact if the project is consistent with the 2022 CAP and applicable regulatory programs and policies adopted by CARB or other California agencies. Under CEQA environmental checklist criterion "b," staff identifies the requirements specified in the 2022 CAP and regulatory programs and policies that apply to the project.

Indirect Emissions from Electricity Use. Staff conservatively assumes the project could consume up to 630,720 megawatt hours (MWh) of electricity per year after full build-out, but actual electricity demand would be lower. With the carbon intensity of 222 lbs CO_2/MWh for 2023 based on Silicon Valley Power's (SVP) prediction and CalEEMod default methane (CH_4) and nitrous oxide (N_2O) intensity factors (0.029 lbs/MWh and 0.006 lbs/MWh, respectively), the worst-case GHG emissions due to electricity use during full build-out operation would be 64,199.2 $MTCO_2e/yr$[3].

Electricity to the project would be provided by SVP, a utility that is on track to meet their 2030 GHG emissions reductions target. SVP is subject to CARB's cap-and-trade program requirements and the Renewables Portfolio Standard (RPS) requirements.

Actual GHG emissions associated with electricity use at the project would be much less than 64,199.2 $MTCO_2e/yr$ since actual electricity use would be less than the maximum use and the SVP annual average emission factor would be tracking downward towards

3 Annual electricity use: 72 MW x 8,760 hours/year = 630,720 MWh/year.
(1) Carbon intensity of CO_2: 222 lbs CO_2/MWh.
GHG emission due to electricity use = 222 lbs CO_2/MWh x 630,720 MWh/year = 140,014,840 lbs CO_2/year
140,014,840 lbs CO_2/year x (1 MT/ 2,204.62 lbs) = 63,512.01 $MTCO_2e$/year
(2) Carbon intensity of CH_4: 0.029 lbs/MWh.
GHG emission due to electricity use = 0.029 lbs/MWh x 630,720 MWh/year = 18,290.88 lbs CH_4/year.
18,290.88 lbs CH_4/year x 28 (GWP) x (1 MT/ 2,204.62 lbs) = 232.31 $MTCO_2e$/year.
(3) Carbon intensity of N_2O: 0.006 lbs/MWh.
GHG emission due to electricity use = 0.006 lbs/MWh x 630,720 MWh/year = 3,784.32 lbs N_2O/year.
3,784.32 lbs N_2O/year x 265 (GWP) x (1 MT/ 2,204.62 lbs) = 454.88 $MTCO_2e$/year.
18,290.88 lbs CO_2e/year + 232.31 $MTCO_2e$/year + 454.88 $MTCO_2e$/year = 64,199.2 $MTCO_2e$/year.

"zero net" with the implementation of state and local measures to reduce GHG emissions associated with electricity production and California's fuels.

In addition, the City adopted the 2022 CAP Update on June 7, 2022. The 2022 CAP Update includes Action B-1-7, "Carbon neutral data centers: requiring all new data centers to operate on 100 percent carbon neutral energy, with offsets as needed."

As discussed in detail under CEQA environmental checklist criterion "b," the project would implement a variety of energy efficiency measures. The project would comply with all applicable city and state green building standards code measures. The project would comply with Energy and Climate Measure (ECM)-1 – Energy Efficiency in BAAQMD's 2017 Bay Area Clean Air Plan. Therefore, for these and the reasons discussed above, and with implementation of mitigation measure **GHG-2**, the project would not conflict with plans, policies, or regulations adopted to achieve long-term GHG emissions reduction goals.

Other Indirect and Non-Stationary Source Emissions. The project's other indirect and non-stationary sources include mobile sources, landscaping, water use, waste, and refrigerant use as shown in **Table 4.8-4**. The project's compliance with the 2022 CAP and applicable regulatory programs and policies adopted by CARB and other California agencies would ensure the project's GHG emissions from these sources would not have a significant impact. For example, staff analyzed the project's compliance and consistency with policies related to transportation (5.8.5-P1 in the General Plan, Action T-3-1 and Action T-1-5 in the 2022 CAP Update), water (5.10.3-P6, 5.10.4-P6, 5.10.4-P7 in the General Plan, Action N-3-4 and Action N-3-6 in the 2022 CAP Update), and waste (Action M-3-1 in the 2022 CAP Update). Staff concludes that these indirect and non-stationary sources would comply with local and regional plans and strategies adopted to reduce GHG emissions and the project's GHG impacts from these sources would be less than significant.

With the implementation of mitigation measure **GHG-2** and other project design features, GHG emissions related to the project from indirect and non-stationary sources would be consistent with the applicable plans and policies adopted to reduce GHG emissions and would comply with all regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The potential for the project to conflict with an applicable plan, policy, or regulation for GHG reductions would be less than significant.

4.8.2 Environmental Setting

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of GHGs have a much broader, global impact. Global warming associated with the "greenhouse effect" is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the Earth's atmosphere. The principal GHGs that contribute to global warming and climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), black carbon, and fluorinated gases (F-gases)

(hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6])[4]. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors[5].

Each GHG has its own potency and effect upon the Earth's energy balance, expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1. Specifically, the GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given time relative to the emissions of 1 ton of CO_2. The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time. The time usually used for GWPs is 100 years[6].

For example, CH_4 has a GWP of 28 over 100 years from the Fifth Assessment Report (AR5)[7] of the Intergovernmental Panel on Climate Change (IPCC 2013), which means that it has a global warming effect 28 times greater than CO_2 on an equal-mass basis. The F-gases are sometimes called high-GWP gases because, for a given amount of mass, they trap substantially more heat than CO_2. The GWPs for these gases can be in the thousands or tens of thousands. The carbon dioxide equivalent (CO_2e) for a source is obtained by multiplying each quantity of GHG by its GWP and then adding the results together to obtain a single, combined emission rate representing all GHGs in terms of CO_2e.

Regulatory Background

Federal

The project would not be subject to any federal requirements for GHGs.

State

California Global Warming Solutions Act of 2006. In 2006, the state Legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32, Núñez, Chapter 488, Statutes of 2006), codified as Health and Safety Code, section 38500 and the following, which provided the initial framework for regulating GHG emissions in California. This law required CARB to design and implement GHG emissions limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. AB 32 also

4 US. EPA. Overview of Greenhouse Gases, which is available online at: https://www.epa.gov/ghgemissions/overview-greenhouse-gases

5 US. EPA. Sources of Greenhouse Gas Emissions, which is available online at https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

6 US. EPA. Understanding Global Warming Potentials, which is available online at https://www.epa.gov/ghgemissions/understanding-global-warming-potentials

7 The GWP values have been refined in the 2021 IPCC Sixth Assessment Report (AR6). Available online at: https://www.ipcc.ch/report/ar6/wg1/. The GWP for CH_4 has been updated to 29.8 from fossil fuel sources and 27.0 from non-fossil sources.

required CARB to implement a mandatory GHG emissions reporting program for major sources, which includes electricity generators, industrial facilities, fuel suppliers, and electricity importers.

CARB Scoping Plan. Part of the Legislature's direction to CARB under AB 32 was to develop a scoping plan that serves as a statewide planning document to coordinate the main strategies California will use to reduce GHG emissions that cause climate change. CARB approved the AB 32 Climate Change Scoping Plan (scoping plan) in 2008 and released updates in 2014 and 2017 with the next update planned for 2022. The scoping plan includes a range of GHG emissions reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based compliance mechanisms, such as the cap-and-trade program. In December 2007, CARB set the statewide 2020 emissions limit, defined as reducing emissions to 1990 levels, at 427 million metric tons of CO_2e ($MMTCO_2e$). The 2014 scoping plan adjusted the 1990 emissions estimate and the statewide 2020 emissions limit goal to 431 $MMTCO_2e$ (CARB 2014). The 2017 scoping plan (CARB 2017a) demonstrates the approach necessary to achieve California's 2030 target, which is to reduce GHG emissions 40 percent below 1990 levels to 260 $MMTCO_2e$. On November 16, 2022, CARB published the 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022c), which lays out a path to achieve targets for carbon neutrality by 2045.

Mandatory Reporting of Greenhouse Gas Emissions. AB 32 also required CARB to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions (Health and Safety Code, section 38530). CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Cal. Code Regs., tit. 17 §§95100 to 95163), which took effect January 2009, requires annual GHG emissions reporting from electric power entities, fuel suppliers, CO_2 suppliers, petroleum and natural gas system operators, and industrial facilities that emit at least 10,000 $MTCO_2e$/yr from stationary combustion and/or process sources. The project would not be impacted by this regulation because stationary source testing and maintenance combustion GHG emissions are expected to be below the reporting threshold of 10,000 $MTCO_2e$/yr, as shown in **Table 4.8-3**.

Cap-and-Trade Program. CARB's cap-and-trade program (Health and Saf. Code, § 38562; Cal. Code Regs., tit. 17 §§95801 to 96022) took effect January 1, 2012. The cap-and-trade program establishes a declining limit on major sources of GHG emissions by sector throughout California, and it creates economic incentives for sources to invest in cleaner, more efficient technologies. The current version of the regulation, effective April 2019, established the increasingly stringent compliance obligations for years 2021 to 2030. The cap-and-trade program applies to covered entities that fall within certain source categories, including first deliverers of electricity (such as fossil fuel power plants) and electrical distribution utilities; in this case, the project would obtain electrical service from SVP. Covered entities in the cap-and-trade program, including SVP, must hold compliance instruments sufficient to cover their actual GHG emissions, as set and verified through the CARB's Mandatory Reporting regulation. For the electricity supplied to the project from the grid, SVP bears the GHG emissions compliance obligation under the cap-

and-trade program for delivering electricity to the grid from its power plants and for making deliveries to end-users, such as the project, unless the project is otherwise a covered entity in the cap-and-trade program.

Executive Order B-30-15. On April 29, 2015, former Governor Brown issued Executive Order B-30-15, directing state agencies to implement measures to reduce GHG emissions 40 percent below their 1990 levels by 2030 and to make it possible to achieve the previously stated goal of an 80 percent GHG emissions reduction below 1990 GHG emissions by 2050 (CARB 2017a).

Statewide 2030 GHG Emissions Limit. On September 8, 2016, SB 32, codified as Health and Safety Code, section 38566, extended California's commitment to reduce GHG emissions by requiring the state to reduce statewide GHG emissions by 40 percent below 1990 levels by 2030 (CARB 2017a).

Renewable Energy Programs. In 2002, California initially established the RPS with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. State energy agencies recommended accelerating that goal, and former Governor Schwarzenegger's Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity goal by 2020, consistent with the CARB's 2008 scoping plan. In April 2011, Senate Bill X1-2 (Simitian, Chapter 1, Statutes of 2011) of the First Extraordinary Session was signed into law. SB X1-2 expressly applied the 33 percent RPS by December 31, 2020, to all retail sellers of electricity and established renewable energy standards for interim years prior to 2020.

- **Clean Energy and Pollution Reduction Act (Senate Bill 350, De León, Chapter 547, Statutes of 2015):** Beginning in 2016, SB 350 took effect declaring it the intent of the Legislature to acknowledge Governor Brown's clean energy, clean air and greenhouse gas emissions reduction goals for 2030 and beyond. SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030.
- **The 100 Percent Clean Energy Act of 2018 (Senate Bill 100, De León, Chapter 312, Statutes of 2018):** Beginning in 2019, the RPS deadlines advanced to 50 percent renewable resources by December 31, 2026, and 60 percent by December 31, 2030. In addition, SB 100 establishes policy that renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity by December 31, 2045.
- **Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020, Laird, Chapter 361, Statutes of 2022):** Accelerates the timelines set forth in SB 100 to provide that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, 100 percent of all retail sales of electricity to California end-

use customers by December 31, 2045, and 100 percent of electricity procured to serve all state agencies by December 31, 2035, as specified.

Short-Lived Climate Pollutant Strategy. To best support the reduction of GHG emissions consistent with AB 32, CARB released the Short-Lived Climate Pollutant (SLCP) Strategy, under Health and Safety Code, section 39730, in March 2017. Health and Safety Code, section 39730, defined SLCPs as having lifetimes in the atmosphere ranging from "a few days to a few decades." Then beginning in 2017 under Health and Safety Code, section 39730.5, CARB was directed to set targets to reduce SLCP emissions 40 percent below 2013 levels by 2030 for CH_4 and HFCs and 50 percent below 2013 levels by 2030 for anthropogenic black carbon (CARB 2017b). The SLCP Strategy was integrated into the 2017 update to CARB's scoping plan. To help meet the HFC reduction goal, California adopted HFC prohibitions and consolidated the California HFC prohibition regulation (previously Cal. Code Regs., tit. 17, §§ 95371-95377) and the statute (Senate Bill 1013 [Lara, Chapter 375, Statutes. of 2018], Health and Saf. Code § 39734) into one place. The California Code of Regulations, title. 17, section 95375(c)(1) states that no person shall sell, lease, rent, install, use, or otherwise enter into commerce in the State of California any end-use equipment or product manufactured after the effective date that does not comply with Table 3 (which includes chillers) of section 95374(c) of the subarticle, with exceptions stated under California Code of Regulations, title 17, section 95375(c)(2). In addition, on September 30, 2022, the Governor approved Senate Bill 1206 (Skinner, Chapter 884, Statutes of 2022), which would prohibit a person from offering for sale or distribution, or otherwise entering into commerce in the state, bulk HFCs or bulk blends containing HFCs that exceed a specified GWP limit beginning January 1, 2025, and lower GWP limits beginning January 1, 2030, and January 1, 2033. The bill does not restrict the authority of CARB to establish regulations lowering the maximum allowable GWP limits below the limits established by the bill.

Executive Order B-55-18. On September 10, 2018, the same day he signed SB 100 into law, former Governor Brown issued Executive Order B-55-18 to achieve carbon neutrality, stating the governor's intention "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing greenhouse gas emissions." From the 2020 GHG limit of 431 $MMTCO_2e$, California would need to reduce statewide emissions another 170 million tons to meet its 2030 statutory target of 260 million tons per year (40 percent below 1990 levels). The state would need to cut annual emissions by a further 175 million tons to meet its 2050 goal (set by executive order) of 85 million tons per year (80 percent below 1990 levels).

Reducing SF_6 Emissions from Gas Insulated Switchgear. In early 2011, CARB adopted a regulation (17 CCR §§95350 to 95359) to reduce SF_6 emissions in gas insulated switchgear (GIS) used in the electricity sector's transmission and distribution system as an early action measure pursuant to AB 32. SF_6 is an extremely powerful and long-lived GHG. The 100-year GWP of SF_6 is 22,800 (from IPCC Fourth Assessment Report), making it the most potent of the six main GHGs, according to the U.S. EPA. Because of its

extremely high GWP, small reductions in SF_6 emissions can have a large impact on reducing GHG emissions, which are the main drivers of climate change. The regulation requires GIS owners to report SF_6 emissions annually and requires reductions of SF_6 emissions from GIS over time, setting an annual emission rate limit for each GIS owner. The maximum allowable emission rate started at 10 percent in 2011 and has decreased one percent per year since then. The limit reached one percent in 2020 and remained at that level going forward. However, data shows that statewide SF_6 capacity is growing by one to five percent per year, which would increase the expected SF_6 emissions. In response to emerging technologies using lower or zero GWP insulators, CARB amended the regulation (Cal. Code Regs., tit. 17, §§ 95350-95359.1) in 2021 to further reduce GHG emissions from gas-insulated equipment (GIE [changed from GIS to include more devices beyond switchgear]). Key provisions of the amended regulation include a phase-out schedule in stages between 2025 and 2033 for new SF_6 GIE, coverage of other GHG beyond SF_6 used in GIE, and other changes that enhance accuracy of emissions accounting and reporting.

The California Climate Crisis Act (Assembly Bill 1279). Assembly Bill 1279 (Muratsuchi, Chapter 337, Statutes of 2022) establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies. The CARB 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022c) plans for the 2045 target set forth by AB 1279 and Executive Order B-55-18.

Regional

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

BAAQMD CEQA Guidelines. The purpose of the BAAQMD CEQA Guidelines is to assist lead agencies in evaluating a project's impacts on air quality (BAAQMD 2017b). This document describes the criteria that BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds of significance for determining whether a project would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies

measures that can be used to avoid or reduce air quality impacts. The BAAQMD CEQA Guidelines include methodologies for estimating GHG emissions. In a comment letter on the Notice of Preparation for the EIR of a recent data center project (i.e. CA3 Data Center in Santa Clara, CA), BAAQMD indicated that the current recommended GHG thresholds in the BAAQMD 2017 CEQA Guidelines are based on the statewide 2020 GHG targets, which are now superseded by the statewide 2030 GHG targets established in Health and Safety Code, section 38566. BAAQMD recommended that the GHG analysis should evaluate the consistency of the project with California's 2030, 2045 and 2050 climate goals (BAAQMD 2021a). In November 2021, BAAQMD staff was in the process of preparing and presenting to the BAAQMD board for approval an update to the CEQA GHG threshold for stationary sources from the existing value of 10,000 $MTCO_2e/yr$ to 2,000 $MTCO_2e/yr$ or compliance with CARB's cap-and-trade program. However, the BAAQMD staff has paused work on the stationary source thresholds to focus on updating thresholds for land use projects and plans. After the project and plan level thresholds are adopted, which occurred in April 2022, BAAQMD staff would turn their attention to the stationary source threshold of significance and further investigate appropriate approaches.

Diesel Free by '33. In 2018, BAAQMD established a program intended to reduce GHG and criteria pollutant emissions by eliminating petroleum use by the end of 2033. Local Bay Area agencies are encouraged to voluntarily adopt the Statement of Purpose of this initiative. Entities signing the Statement of Purpose pledge to develop their own individual strategies to achieve the goal of reaching zero diesel emissions in their communities. Signatories to this agreement express their intent to:

1. Collaborate and coordinate on ordinances, policies, and procurement practices that will reduce diesel emissions to zero within their jurisdictions, communities, or companies;
2. Share and promote effective financing mechanisms domestically and internationally to the extent feasible that allow for the purchase of zero emissions equipment;
3. Share information and assessments regarding zero emissions technology;
4. Build capacity for action and technology adaptation through technology transfer and sharing expertise;
5. Use policies and incentives that assist the private sector as it moves to diesel-free fleets and buildings; and
6. Periodic reporting to all signers of progress towards the zero- diesel emissions goal.

Plan Bay Area 2040. Under the requirements of The Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375, Steinberg, Chapter 728, Statutes of 2008), all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan. In the Bay Area, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing to meet GHG emissions reduction targets set by CARB. In July 2017, the MTC and ABAG approved Plan Bay Area 2040, which is a strategic

update to the previous plan approved in July 2013. The Bay Area GHG emissions reduction targets established by CARB in September 2010 include a seven percent reduction in GHG emissions per capita from passenger vehicles by 2020 compared to 2005 emissions. Similarly, Plan Bay Area 2040 includes a target to reduce GHG emissions per capita from passenger vehicles 15 percent by 2035 compared to 2005 emissions (MTC & ABAG 2017).

Local

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

City of Santa Clara Climate Action Plan. The City has a comprehensive GHG emissions reduction strategy, referred to as the City's Climate Action Plan 2022 (Santa Clara 2022). The 2022 CAP includes a plan for implementing the plan and monitoring and evaluating progress through the implementation phases. The 2022 CAP is designed to meet the statewide GHG reduction targets of 40% reduction in emissions for 2030 set by SB 32, 80% reduction in emissions for 2035 by the City's interim target, and net carbon neutrality by no later than 2045 by EO B-55-18 target (Santa Clara 2022, p.4).

The 2022 CAP identifies existing City policies and regulations as well as new measures to be implemented by development projects in the areas of building/energy use, transportation and land use, materials and consumption, natural resources and water resources, and community resilience and wellbeing. Projects that comply with the policies and strategies outlined in the 2022 CAP and that are consistent with the General Plan land use designation on the project site would have a less than significant GHG impact (GI Partners 2022e, p. 140).

The 2022 CAP identified the City's approach to achieve its share of statewide emissions reductions for the near-term (2023-2026), mid-term (2027-2030), and long-term (after 2030) phase timeframes established by Health and Safety Code, section 38550. The original CAP, adopted on December 3, 2013, specified the strategies and measures to be taken for a number of focus areas city-wide to achieve the overall emissions reduction target. The 2022 CAP also includes oversight and accountability, including a creation of a City Sustainability & Climate Action Team to coordinate implementation and regular public updates and reporting on CAP progress through a Community Dashboard. This update also includes monitoring and evaluations, including annual progress reports and frequent updates of the City's GHG emissions inventory.

The 2022 CAP Update reflects the 2030 GHG emissions limit requirements and progress toward meeting the long-term targets of Executive Order B-55-18. In addition to these targets, the City aspires to reduce emissions more aggressively in the near-term: achieve

an 80 percent reduction in per-service population emissions by 2035. The 2022 CAP Update identifies strategies and actions in these main areas: building and energy, transportation and land use, materials and consumption, natural systems and water resources, and community resilience and well-being. To achieve the interim target of an 80 percent reduction in per-service population emissions by 2035, the City will take additional actions including achieve 100 percent carbon neutral electricity by 2035 and require all new construction to be all-electric (with minor exemptions). Actions specifically related to data centers for achieving GHG emissions reductions include:

- B-1-7, Carbon neutral data centers:
  Require all new data centers to operate on 100% carbon neutral energy, with offsets as needed.
- B-3-6, Alternative fuel backup generators:
  Provide information and technical assistance to data centers and other large commercial users to transition from diesel to lower-carbon backup generators (e.g., renewable diesel).
- B-3-7, Renewable electricity for new data centers:
  Support convening of a data center working group to identify and implement renewable electricity purchasing options for commercial customers.

The CEQA Guidelines allow a lead agency to use a Qualified GHG Reduction Strategy to determine the degree to which a proposed project would cause a significant adverse impact. Compliance with appropriate measures in the CAP would ensure an individual project is not cumulatively significant under CEQA.

Silicon Valley Power's Integrated Resource Plan and Other Programs. The City adopted an Integrated Resource Plan (IRP) for SVP dated November 12, 2018 (SVP 2018). The IRP was developed as required by SB 350 and must be updated at least every five years. The IRPs provide a framework to evaluate how utilities have chosen to align with greenhouse gas emissions reduction targets as well as energy and other policy goals outlined in SB 350. The most challenging goals in the IRP call for the City to: (1) increase procurement of energy from renewable electricity sources to 60 percent by 2030, and (2) double energy efficiency savings in electricity and natural gas end uses by 2030.

CEC staff in the Supply Analysis Office of the Energy Assessments Division have reviewed SVP's 2018 IRP (CEC 2019) and found that, among other things, by the year 2030 SVP: (1) achieves a 40 percent GHG emissions reduction from 1990 levels, and (2) meets the RPS goals of SB 350 to use 50 percent renewables.

In addition to carrying out activities related to their IRP, SVP has also created a Large Customer Renewable Energy (LCRE) program to allow its large customers to sign up for 100 percent renewable energy. In November 2021, the City approved SVP's LCRE program, which became effective January 1, 2022 (SVP 2021). The program is a voluntary green program for large customers to purchase additional renewable energy above the amount of renewable energy already included in SVP's energy delivery portfolio to

accelerate customers' higher corporate renewable and sustainability goals. Customers have two options to participate in the program: (1) SVP procures supplemental renewable energy for customers for a one-year term, and (2) customers provide their own supplemental renewable energy resource under a five-year or 10-year term customer agreement with SVP. The program is available for the project applicant to use.

Existing Conditions

California is a contributor to global GHG emissions. The total gross California GHG emissions in 2019 were 404.5 $MMTCO_2e$ (CARB 2022a). The largest category of GHG emissions in California is transportation, followed by industrial activities and electricity generation in state and out of state (CARB 2022a). In 2020, the total gross California GHG emissions were 369.2 $MMTCO_2e$ (CARB 2022a).

In 2019, the total gross U.S. greenhouse gas emissions were 6,571.7 $MMTCO_2e$, or 5,841.2 $MMTCO_2e$ after accounting for sequestration from the land sector (U.S. EPA 2022). While in 2020, total gross U.S. greenhouse gas emissions were 5,981.4 $MMTCO_2e$, or 5,222.4 $MMTCO_2e$ after accounting for sequestration from the land sector (U.S. EPA 2022). The sharp decline of GHG emissions in 2020 compared to 2019 was largely due to the impacts of the coronavirus (COVID-19) pandemic on travel and economic activity (CARB 2022a, U.S. EPA 2022).

The City prepares an annual report to assess progress towards meeting the GHG emissions reduction targets established in the CAP and recommend next steps to help the City meet its targets. The City tracks changes in communitywide GHG emissions since 2008, which is the City's jurisdictional baseline year for the GHG emissions inventory. The CAP 2018 Annual Report provides the City's GHG emissions inventory in 2016, which is the most recent GHG emissions inventory for the Santa Clara. **Table 4.8-1** presents the City's 2016 GHG emissions inventory (Santa Clara 2018).

TABLE 4.8-1 CITY OF SANTA CLARA 2016 GHG EMISSIONS INVENTORY

Sector	Carbon dioxide equivalent emissions ($MTCO_2e$)
Commercial Energy	1,080,261
Residential Energy	132,912
Transportation & Mobile Sources	505,989
Solid Waste	25,724
Water & Wastewater	24,292
Total Emissions	1,769,178

Source: Santa Clara 2018.

As stated in their 2018 IRP (SVP 2018), SVP follows the state's preferred loading order in procuring new energy resources. First, the current load (customer) is encouraged to participate in energy efficiency programs to reduce their usage, thus freeing up existing resources (and any related emissions) for new load (electricity demand). In addition, both

the City and SVP encourage the use of renewable resources and clean distributed generation, and the local area has seen a significant increase in the use of large and small rooftop photovoltaics. Demand displaced by customer-based renewable projects is also available to meet new loads.

SVP seeks to meet its RPS milestones through the addition of new renewable resources. In January 2018, SVP began providing 100 percent carbon-free power to all residential customers. This is reflected in the Power Content Label through separate products for the residential and non-residential mix (SVP 2023). A comparison of SVP's and the statewide power mix for 2021 is shown in **Table 4.8-2**. SVP is in various stages of clean energy procurement for the future, negotiating contracts for over 700 Megawatts of energy, totaling over 2,200,000 MWh annually. This is equivalent to powering 366,000 homes. These resources will be constructed and brought online over the next five years (SVP 2023). As with all load serving entities in California, the carbon intensity factor will continue to change as the power mix gradually increases the use of renewable resources to achieve California's GHG and renewable energy goals.

TABLE 4.8-2 COMPARISON OF SVP AND STATEWIDE POWER MIX – 2021

Energy Resources	SVP Residential Mix	SVP Non-Residential Mix	SVP Green Power Standard Mix	Green Power National Mix	2021 CA Power Mix
Eligible Renewable	**35.9%**	**27.0%**	**100%**	**27.0%**	**33.6%**
-Biomass & Biowaste	0%	2.1%	0%	2.1%	2.3%
-Geothermal	0%	7.1%	0%	7.1%	4.8%
-Eligible Hydroelectric	0%	5.9%	0%	5.9%	1.0%
-Solar	14.7%	4.1%	100%	4.1%	14.2%
-Wind	21.2%	7.8%	0%	7.8%	11.4%
Coal	**0%**	**0%**	**0%**	**0%**	**3.0%**
Large Hydroelectric	**64.1%**	**6.7%**	**0%**	**6.7%**	**9.2%**
Natural Gas	**0%**	**34.3%**	**0%**	**34.3%**	**37.9%**
Nuclear	**0%**	**-0%**	**0%**	**0%**	**9.3%**
Other	**0%**	**0%**	**0%**	**0%**	**0.2%**
Unspecified sources of power	**0%**	**32.0%**	**0%**	**32.0%**	**6.8%**
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**

Source: SVP 2023

4.8.3 Environmental Impacts

Methodology

The applicant estimated GHG emissions for demolition/construction from the demolition/construction equipment, vendor and hauling truck trips, and worker vehicle trips.

GHG emissions from the project operation are a result of diesel fuel combustion from the readiness testing and maintenance of the emergency backup generators, offsite vehicle trips for worker commutes and material deliveries, and facility upkeep (such as architectural coatings, consumer product use, landscaping, water use, waste generation, and electricity use).

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

Construction

Less Than Significant Impact. Construction of the project would result in GHG emissions generated by the on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. The applicant estimated that the maximum annual GHG emissions from these sources would be approximately 256 $MTCO_2e$ during 2 years of construction, including demolition, site preparation, grading, and on-and-off-site construction (GI Partners 2022e, p. 138).

Because construction emissions would cease once construction is complete, these emissions are considered short term. The BAAQMD CEQA Guidelines do not identify a GHG emissions threshold for construction-related emissions. Instead, BAAQMD recommends that GHG emissions from construction be quantified and disclosed. BAAQMD further recommends the incorporation of BMPs to reduce GHG emissions during construction, as feasible and applicable. BMPs may include the use of alternative-fueled (for example, renewable diesel or electric) construction vehicles and equipment for at least 15 percent of the fleet, use of at least 10 percent of local building materials, and recycling or reusing at least 50 percent of construction waste (BAAQMD 2017b). The project would implement mitigation measure **AQ-1**, which would require, among other things, that the construction equipment be tuned and maintained in accordance with manufacturer's specifications and that construction equipment idling time be limited to five minutes to reduce GHG emissions from fuel consumed from unnecessary idling or the operation of poorly maintained equipment. The project would also participate in the City's Construction & Demolition Debris Recycling Program by recycling or diverting at least 65 percent[8] of materials generated for discards by the project to reduce the amount of demolition and construction waste going to the landfill (GI Partners 2022e, Table 3.8-3). The quantity of construction-related GHG emissions would be limited to the construction phase, which would ensure GHG impacts are less than significant.

Operation

Less Than Significant with Mitigation Incorporated. GHG emissions from project operation and maintenance would consist of direct "stationary source" emissions from routine readiness testing and maintenance of the emergency backup generators and indirect and

8 https://www.santaclaraca.gov/our-city/departments-g-z/public-works/environmental-programs/commercial-and-industrial-garbage-recycling/construction-demolition-debris-recycling-program

"non-stationary source" emissions from offsite vehicle trips for worker commutes and material deliveries, and facility upkeep, including architectural coatings, consumer product use, landscaping, water use, waste generation, and electricity use.

i. Direct Project Stationary Combustion Sources

The applicant has proposed to use renewable diesel fuel as its primary fuel, with ultra-low sulfur diesel (<15 parts per million sulfur by weight) used as secondary backup fuel in the event that renewable diesel is unavailable (GI Partners 2023d). As discussed in more detail in **Section 4.6 Energy and Energy Resources**, the current supply for both renewable diesel and ultra-low sulfur diesel is more than sufficient to meet the project's necessary demand. The available resource of renewable diesel would increase with more refineries coming online and more import supply. Staff expects that most likely the readiness testing and maintenance would be done with renewable diesel because such refueling can be scheduled. However, during emergency operations, the applicant might need to use ultra-low sulfur diesel in the event of supply challenges or disruption in obtaining renewable diesel.

BAAQMD CEQA Guidelines indicates that biogenic CO_2 emissions would not be included in the quantification of GHG emissions for characterizing the CEQA impact significance for a project (BAAQMD2017b, page 4-5). Accordingly, with the use of 100 percent renewable diesel, the project's GHG emissions from routine readiness testing and maintenance of the gensets would be exempt from the stationary source threshold. Therefore, staff expects that the GHG emissions from the gensets for routine readiness testing and maintenance would be less than significant.

Despite the exemption from the stationary source threshold, staff performed a quantitative estimation of the GHG emissions from readiness testing and maintenance of the gensets. Staff concludes that it is reasonable to expect that all the readiness testing and maintenance would be done with renewable diesel. Staff assumed 50 hours of annual testing and maintenance at 100 percent load for a conservative analysis.

CARB's 2021 testing report shows that renewable diesel used in place of ultra-low sulfur diesel can only reduce CO_2 tailpipe emissions approximately 3 to 4 percent (CARB 2021). However, renewable diesel is produced with a fuel-cycle that is a far lower carbon intensity (CI) than ultra-low sulfur diesel. **Table D-2** in **Appendix D** shows that there are 61 to 83 percent reduction in CI values using renewable diesel from various feedstocks in place of ultra-low sulfur petroleum-based diesel. Since the impacts analysis of GHG emissions is global in nature, staff computed the fuel-cycle GHG emissions of the gensets. Based on average CI data for the last five years (3rd Quarter 2017 through 2nd Quarter 2022) and energy densities of renewable diesel and ultra-low sulfur petroleum-based diesel reported to CARB's Low- Carbon Fuel Standard program (CARB 2022b), staff calculated that the GHG emission factor (in terms of $MTCO_2e$/gallon) would reduce by about 67.2 percent using renewable diesel compared to ultra-low sulfur petroleum-based diesel. With the assumption of additional 3 percent tailpipe CO_2 emissions reduction, the

total fuel-cycle GHG reduction would be about 68.18 percent[9] using renewable diesel compared to ultra-low sulfur petroleum-based diesel. The applicant estimated the GHG emissions of about 3,405 $MTCO_2e/yr$ (GI Partners 2022e, p. 142) from the proposed engines if ultra-low sulfur petroleum-based diesel is used. With the 68.18 percent reduction in GHG emissions using 100 percent renewable diesel in place of ultra-low sulfur petroleum-based diesel, staff calculated the fuel-cycle GHG emissions of the proposed engines during readiness testing and maintenance to be 1,083 $MTCO_2e/yr$.

Table 4.8-3 shows the maximum annual-fuel-cycle GHG emission expected for the gensets routine readiness testing and maintenance with renewable diesel. The emissions are conservatively estimated based on 50 hours of annual testing and maintenance at 100 percent load per engine. **Table 4.8-3** also shows that the estimated average annual GHG emissions from the project's stationary sources (i.e. the emergency backup generators) for routine readiness testing and maintenance are well below the existing BAAQMD CEQA Guidelines GHG emissions significance threshold of 10,000 $MTCO_2e/yr$ for stationary sources and would not exceed the threshold level for inclusion in CARB's cap-and-trade program, which is 25,000 $MTCO_2e/yr$. In addition, as mentioned above, in November 2021, BAAQMD staff was in the process of preparing and presenting to the BAAQMD board for approval an update to the CEQA GHG threshold for stationary sources from 10,000 $MTCO_2e/yr$ to 2,000 $MTCO_2e/yr$ or compliance with CARB's cap-and-trade program. With the use of 100 percent renewable diesel, the fuel-cycle GHG emissions from the gensets for routine readiness testing and maintenance would also be lower than 2,000 $MTCO_2e/yr$.

TABLE 4.8-3 GREENHOUSE GAS EMISSIONS FROM EMERGENCY BACKUP GENERATORS TESTING AND MAINTENANCE

Source	Maximum Annual Emissions ($MTCO_2e/yr$)
Emergency backup generators – Testing and Maintenance	1,083[a]
Proposed Future BAAQMD Threshold	2,000
Exceeds Threshold?	No

Source: CEC staff analysis and GI Partners 2022e, Table 3.8-2
Note: [a] The applicant estimated the GHG emissions of about 3,405 $MTCO_2e/yr$ (GI Partners 2022e, Table 3.8-2) from the proposed engines if ultra-low sulfur diesel is used. As discussed in the text above, with the 68.18 percent reduction in GHG emissions using renewable diesel in place of ultra-low sulfur diesel, staff calculated the fuel-cycle GHG emissions of the proposed engines to be 1,083 $MTCO_2e/yr$.

The project's likelihood of operating the emergency backup generators for unplanned circumstances or emergency purposes is low and, if such operation did occur, it would be infrequent and of short duration. As discussed in more detail in **Appendix B**, the analysis of BAAQMD's review of diesel engine use shows that the overall number of hours of operation for the facilities in the review that did run (which was less than half of them) was 0.07 percent of the available time over the 13-month period, which included the rare heat storm events in 2020 and is the only period for which data are available to staff.

9 1-(1-67.2%)x(1-3%)=68.18%

The average runtime for each event in BAAQMD's review was approximately 5.0 hours. Staff concludes the GHG emissions of the emergency backup generators during unplanned circumstances or emergency purposes would not add significantly to the GHG emissions estimated for readiness testing and maintenance. Additionally, the GHG emissions during the routine operation of the emergency backup generators are overestimated with 50 hours of readiness testing and maintenance per year per engine. Project applicants previously stated that routine readiness testing and maintenance would rarely exceed 12 hours per year. The emergency operation of the emergency backup generators is expected to be infrequent and of short duration. It would be speculative to estimate that the project would engage in emergency operation averaging over 38 (= 50-12) hours per year. As discussed in more detail in **Appendix B**, the analysis of BAAQMD's review of diesel engine use shows that average engine ran no more than 36.5 hours over the 13-month period, which included the rare heat storm events in 2020. Staff expects diesel engine use during normal years would be much less than 36.5 hours. Thus, 50 hours of emergency backup generator operation per year is an appropriate estimate of operational time to accommodate both readiness testing and maintenance and emergency operation for any given year, even if ultra-low sulfur diesel is used during short emergency operation durations in the event of supply challenges or disruption in obtaining renewable diesel.

The applicant proposed a measure (PD GHG-1) which committed to use renewable diesel as primary fuel or ultra-low sulfur diesel as secondary fuel for the gensets (GI Partners 2023d). Staff agrees that this would be beneficial because the use of renewable diesel would reduce carbon dioxide emissions when compared with petroleum diesel. Staff proposes mitigation measure **GHG-1** to require the applicant to use renewable diesel for 100 percent of total energy use by the emergency backup generators, and only use ultra-low sulfur diesel as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. The project owner shall perform any source test of the emergency backup generators using renewable diesel if required by the BAAQMD.

With the implementation of **GHG-1**, the environmental impact of GHG emissions from the project's stationary sources would be reduced to less than significant. In addition, as discussed below, with the implementation of **GHG-1**, the project's stationary sources would not conflict with plans, policies, or regulations adopted to achieve long-term GHG emissions reduction goals.

ii. Indirect and Non-Stationary Sources Emissions

Maximum GHG emissions from indirect and non-stationary sources (i.e. energy use, mobile sources and building operation) are provided in **Table 4.8-4**.

Project Electricity Usage. Table 4.8-4 shows the indirect GHG emissions attributed to electricity use. It also shows the worst-case GHG emissions due to electricity use, which would be during full build-out operation. The primary function of the project is to house computer servers, which require electricity and cooling 24 hours a day to operate. Annual

GHG emissions associated with electricity usage are the product of the maximum estimated annual electricity usage and the utility-specific carbon intensity factor, which depends on the utility's portfolio of power generation sources. The projected maximum demand for the project is 72 MW[10] (GI Partners 2022e, p. 1). After full build-out, staff estimates that the worst-case energy use from the project's activities would be up to 630,720 MWh/year (= 72 MW × 8,760 hours/year). Actual electricity usage in any year would be lower than this level.

Electricity to the project would be provided by SVP, a utility that is on track to meet their 2030 GHG emissions reductions target. SVP is subject to CARB's cap-and-trade program requirements and the Renewables Portfolio Standard (RPS) requirements. Even as SVP improves its fuel mix to meet 2030 and other GHG emissions reduction goals, the project would indirectly emit a significant amount of GHGs as a result of its energy needs. With the carbon intensity of 222 lbs CO_2/MWh for 2023 based on SVP's prediction and CalEEMod default methane (CH_4) and nitrous oxide (N_2O) intensity factors, staff conservatively estimated the worst-case GHG emissions due to electricity use during full build-out operation to be 64,199.2 $MTCO_2e/yr$[11]. As with all load serving entities in California, the carbon intensity factor would continue to change as the power mix gradually increases the use of renewable resources to achieve California's GHG and renewable energy goals.

Actual GHG emissions associated with electricity use at the project would be much less than 64,199.2 $MTCO_2e/yr$ since actual electricity use would be less than the maximum and the SVP annual average emission factor would be tracking downward towards "zero net" with the implementation of state and local measures to reduce GHG emissions associated with electricity production and California's fuels.

In addition, the City adopted the 2022 CAP Update on June 7, 2022. The 2022 CAP Update includes Action B-1-7, "Carbon neutral data centers: requiring all new data centers to operate on 100 percent carbon neutral energy, with offsets as needed." The proposed project is subject to Action B-1-7. The applicant proposed a mitigation measure to comply with Action B-1-7 (PD GHG-1.1) (GI Partners 2022e, pages 36 and 148). Staff evaluated this mitigation measure in the context of the project's compliance with Action B-1-7 and potential impacts associated with carbon use and concludes that the mitigation measure is sufficient. Staff concludes that without this mitigation the project could result in a significant, adverse impact as a result of its indirect GHG emissions. Therefore, staff proposes mitigation measure **GHG-2** to require the applicant to participate in SVP's Large Customer Renewable Energy (LCRE) program or other renewable energy program that accomplishes the same objective as SVP's LCRE program for 100 percent carbon-free electricity or purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity. With implementation of **GHG-2**

10 The project would include 32 gensets powered by 3-MW Cummins QSK95 engines. However, 8 engines would be redundant and used as backup, so the total demand for the project is 72 MW.
11 See footnote 3.

the project would be consistent with Action B-1-7 and potential impacts associated with carbon use would be reduced to less than significant.

Project Mobile Emissions Sources. Table 4.8-4 shows the estimated annual GHG emissions from mobile emissions sources. The calculation was based on the daily worker numbers of 33-35 (GI Partners 2023c, p. 7-8) in CalEEMod.

Project Water Consumption and Waste Generation. Table 4.8-4 shows the estimated annual GHG emissions from water consumption and waste generation. Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. Daily operations at the project would also generate solid waste, which results in fugitive GHG emissions during waste decomposition at the landfill.

Refrigerant Use. The project would use refrigerants in forty-two (42) 450-ton (nominal capacity) rooftop air-cooled chillers (GI Partners 2022e, p. 18). The refrigerant used in the air-cooled chillers proposed would be R-513a (GI Partners 2022f, p. 9). The chiller manufacturer estimates a worst case (barring unpredictable catastrophes) of 0.5 percent annual refrigerant loss a year. Each chiller is charged with 812 lbs of R-513a. The applicant estimated a total of 170.52 lbs of refrigerant would be lost in a year for all (42) of the chillers for the whole project. Since R-513a has a GWP of 537, the project would create about 41.528 $MTCO_2e$ into the atmosphere due to refrigerant loss (GI Partners 2022f, p. 10).

Sulfur Hexafluoride Leakage. SF_6 would not be used as an electrical insulator for any electrical equipment for the project. The project would use "clean air" equipment as an alternative to SF_6 (GI Partners 2022f, p. 10-12).

TABLE 4.8-4. MAXIMUM GHG EMISSIONS FROM ENERGY USE, MOBILE SOURCES, AND BUILDING OPERATION DURING PROJECT OPERATION

Source	Annual Emissions ($MTCO_2e$/yr)
Energy Use [a]	64,199.2
Area Sources [b]	0.0046
Mobile Sources [c]	37.62
Waste Disposed [b]	0.0805
Water Use [b]	1.5842
Cooling System Refrigerant Leakage [d]	41.528
Sulfur Hexafluoride (SF_6) Leakage [e]	0
Total	64,280.02

Sources: BBGF SPPE App Appendix AQ-4 (GI Partners 2022c), page 9, and CEC staff analysis.
Notes:
[a] Based on SVP carbon intensity factor of 222 lbs of CO_2 per MWh provided by SVP for 2023 and CalEEMod default methane (CH_4) and nitrous oxide (N_2O) intensity factors (0.029 lbs/MWh and 0.006 lbs/MWh, respectively). CEC staff assumed the worst-case electricity use of 630,720 MWh/year after full build-out.
[b] Calculation based on CalEEMod default emission factors for office building with surface parking applied to a total of 55,000 square feet (GI Partners 2022e, p. 4 and 226, GI Partners 2022c, p.8 and 9).

[c] Staff calculation based on updated employee information in the revised worker numbers (GI Partners 2023c, p. 7-8).
[d] The applicant estimated GHG emissions from refrigerant leakage based on the leakage rate of 0.5 percent per year and a GWP of 573 for R-513a (GI Partners 2022f, p. 9-10).
[e] SF_6 would not be used as an electrical insulator for any electrical equipment for the project. The project would use "clean air" equipment as an alternative to SF6 (GI Partners 2022f, p. 10-12).

Summary of Indirect and Non-stationary GHG Emissions. As shown in **Table 4.8-4**, operation of the project is estimated to generate 63,593.40 $MTCO_2e$/yr from maximum possible electricity use and other non-stationary sources. However, this does not include efficiency measures that would be pursued as part of the project, nor does it reflect implementation of state and local measures to reduce GHG emissions associated with electricity production and California's fuels. For example, programs to implement SB 350 and SB 100 would continue to promote renewable resources in the power mix and ensure the ongoing substantial reductions in GHG emissions from electricity generation. In addition, with the implementation of mitigation measure **GHG-2**, the project would use 100 percent carbon-free electricity either by participation in SVP's Large Customer Renewable Energy (LCRE) Program or other renewable energy program that accomplishes the same objective as SVP's LCRE Program for 100 percent carbon-free electricity. Therefore, with the implementation of mitigation measure **GHG-2**, the GHG impacts from the project's electricity use would be less than significant.

Conclusion

Less Than Significant with Mitigation Incorporated. The mitigation elements contained in **GHG-1** and **GHG-2** ensure the total emission profile of the project remains less than significant.

With the use of 100 percent renewable diesel, the project's GHG emissions from readiness testing and maintenance of the gensets would be exempt from the stationary source threshold. Despite the exemption, staff estimated the project's fuel-cycle GHG emissions from the annual readiness testing and maintenance of the gensets using renewable diesel and concludes that these emissions would be estimated at 1,083 $MTCO_2e$/yr as shown in **Table 4.8-3**, which is below the existing BAAQMD CEQA Guidelines threshold of significance of 10,000 $MTCO_2e$/yr, which was based on 2020 GHG reduction goals. The fuel-cycle GHG emissions from the gensets would also be lower than 2,000 $MTCO_2e$/yr, which has been proposed by the BAAQMD staff as an updated GHG threshold of significance based on 2030 and 2045 GHG reduction goals. However, the BAAQMD has not finalized the proposed, updated GHG threshold of significance for stationary sources. Therefore, in this analysis, staff evaluates the GHG impacts of the gensets against both the existing threshold and the proposed threshold.

Staff proposes mitigation measure **GHG-1** which ensures the applicant would use renewable diesel for 100 percent of total energy use by the gensets, and only use ultra-low sulfur diesel as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. The City of Santa Clara's Community Development

Department (CDD) may grant temporary relief from the 100 percent renewable diesel requirement if the applicant can demonstrate a good faith effort to comply with the requirement and that compliance is not practical. With this measure, the project's direct GHG emissions from stationary sources would not have a significant direct or indirect impact on the environment. With **GHG-1**, the operation of the gensets would not hinder California's efforts to achieve the statewide 2045 GHG emissions reduction goal.

As discussed below, with the implementation of **GHG-2** and other proposed design features, the GHG emissions from the project's energy usage, mobile sources, and building operation would occur in a manner consistent with the City's CAP and the policies reflected in Executive Order B-55-18, CARB's scoping plan, and later programs to implement SB 350 and SB 100 to achieve the statewide 2030 and other future GHG emissions reduction targets. These categories of GHG emissions would not result in a "cumulatively considerable" contribution under CEQA because they would conform with all applicable plans, policies, and regulations adopted for the purpose of GHG emissions reductions, as discussed further in "b" below. In addition, under the BAAQMD's 2022 CEQA thresholds of significance for land use projects "option B", GHG impacts from indirect and non-stationary emissions sources of the project would be considered to have a less-than-significant impact since the project is consistent with the City's CAP. Therefore, the maximum potential rate of GHG emissions from the project's energy usage, mobile sources, and building operation are determined to have less-than-significant GHG impacts.

The majority of the project's operational GHG emissions would occur from electricity use or during the readiness testing and maintenance of the gensets. The project's likelihood of operating for unplanned circumstances or emergency purposes is low and if such operation did occur it would be infrequent and of short duration. Staff concludes that 50 hours of emergency backup generator operation per year should be enough to accommodate both readiness testing and maintenance and emergency operation for any given year, even if ultra-low sulfur diesel is used during short emergency operation durations in the event of supply challenges or disruption in obtaining renewable diesel. Staff, therefore, concludes that GHG emissions during emergency operation would be less than significant.

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

Construction

Less Than Significant Impact. The project's short-term demolition and construction GHG emissions would not interfere with the state's ability to achieve long-term GHG emissions reduction goals. As mentioned above, the project would implement BMPs, as specified in mitigation measure **AQ-1**, that would reduce construction-related GHG emissions. The project would also participate in the City's Construction & Demolition Debris Recycling

Program to further reduce GHG emissions. The City could also make the use of alternative fuels a condition of approval for new developments during pre-construction review meetings. The vehicles and fuel supplies used during demolition and construction of the project are required to comply with the applicable GHG reduction programs for mobile sources and suppliers of transportation fuels. The project would conform to relevant programs and recommended actions detailed in CARB's scoping plan. Similarly, the project components would not conflict with regulations adopted to achieve the goals of CARB's scoping plan. The project would be consistent with General Plan Energy Policies 5.10.3-P1 (promote the use of renewable energy resources, conservation, and recycling programs), 5.10.3-P4 (encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities), and 5.10.3-P5 (reduce energy consumption through sustainable construction practices, materials, and recycling) (GI Partners 2022e, Table 3.8-4). The project would also comply with the City's construction debris diversion ordinance and state waste diversion requirements to reduce the amount of waste in landfills (GI Partners 2022e, p. 146).

Operation and Maintenance

Less Than Significant with Mitigation Incorporated. The project's GHG emissions related to operation and maintenance would be caused by the combustion of diesel fuel in the emergency backup generator engines and other routine operational activities (including energy use, mobile sources, and building operation).

i. Direct Project Stationary Combustion Sources

The direct project stationary combustion sources are the emergency backup generator engines.

State Plans, Policies, and Regulations

As discussed under Regulatory Background above, California has set ambitious 2030, 2045, and 2050 GHG emissions reduction goals. Because of these goals, staff concludes it is imperative that the identified methods of carbon reduction contained in **GHG-1** and **GHG-2** be employed to ensure the project's GHG emissions are less than significant.

SB 100 established a landmark policy requiring renewable energy and zero-carbon resources supply 100 percent of electric retail sales to end-use customers by 2045. While the project is not directly required to comply with the SB 100 provisions, it is technically a generator of electricity and, therefore, it is reasonable to apply the GHG emissions reduction goal to the project. Mitigation measure **GHG-1** would ensure the applicant uses renewable diesel for 100 percent of total energy use by the gensets, and only use ultra-low sulfur diesel as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. The City 's CDD may grant temporary relief from the 100 percent renewable diesel requirement if the applicant can demonstrate a good faith effort to comply with the requirement and that compliance is not practical. The mitigation would also require annually reporting the status of procuring and using renewable diesel. With implementation of mitigation measure **GHG-1**, the project's stationary sources would use

renewable diesel to ensure that the operation of the gensets would not hinder California's efforts to achieve the statewide 2045 GHG emissions reduction goal.

Regional Plans, Policies, and Regulations

Bay Area 2017 Clean Air Plan. With **GHG-1**, the direct project stationary combustion sources (i.e. emergency backup generator engines) would also be consistent with BAAQMD's Bay Area 2017 Clean Air Plan measure to Decarbonize Electricity Generation (EN1).

Diesel Free by '33. In 2018, the Mayor of Santa Clara personally became a signatory to the BAAQMD's Diesel Free by '33 initiative. However, the CEC has concluded that Diesel Free by '33 is not an appliable GHG emissions reduction strategy, program or law that facilities must comply with. Nevertheless, it is a regional goal to reduce petroleum-based diesel fuel emissions in communities.

Renewable diesel is currently used mostly as a transportation fuel. There are both federal (CEC 2020a) and state incentives that offset the increased cost of renewable diesel compared to petroleum-based diesel when used in transportation applications. However, staff is unaware of any incentives that would apply to stationary sources, including the project. Mitigation measure **GHG-1** would require the applicant to use renewable diesel for 100 percent of total energy use by the gensets, and only use ultra-low sulfur diesel as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel.

Local Plans, Policies, and Regulations

City of Santa Clara General Plan. Air quality policy 5.10.2-P3 encourages the implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants. The project proposes to use emergency backup generators with advanced air pollution controls. The project would be consistent with the Air Quality policy 5.10.2-P3 of the City's General Plan.

2022 CAP Update. The 2022 CAP Update includes Action B-3-6 Alternative fuel backup generators, which would require the City to provide information and technical assistance to data centers and other large commercial users to transition from petroleum-based diesel to lower-carbon backup generators (e.g., renewable diesel) by 2030. Mitigation measure **GHG-1** would require the applicant to use renewable diesel for 100 percent of total energy use by the gensets, and only use ultra-low sulfur diesel as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. The project would be consistent with the Action B-3-6 Alternative fuel backup generators in the 2022 CAP Update.

ii. Indirect and Non-Stationary Sources Emissions

The project's indirect and non-stationary sources emissions include those from energy use, mobile sources and building operation.

State Plans, Policies, and Regulations

The project's GHG emissions are predominantly from electricity usage. Multiple measures contained in CARB's scoping plan address GHG emissions from energy use. For example, CARB's cap-and-trade program, through the regulation of upstream electricity producers, would account for GHG emissions in the project's power mix and requires these emissions to be reduced by the amount needed to achieve the statewide 2030 GHG emissions reduction goal. Electricity sources and suppliers used by the project must comply with the RPS and cap-and-trade program requirements. This, however, is not to say that new large consumers of electricity should not also be responsible for the GHG emissions resulting from their electricity use.

While SVP itself is compliant with SB 100, staff concludes that because the project would present such a large, single potential increase in load (up to 72 MW at full build out), it is not sufficient to point to SVP's compliance to conclude the project's indirect emissions from electricity use are less than significant. The more electricity demand added to the grid, the harder it becomes to meet long-term GHG emissions reduction goals. Transmission resources are not infinite, and renewable imports are increasingly being taken as other states establish their own GHG emissions reduction goals. Adding renewable generation, while obviously preferable to fossil-fueled generation, is not without its own potential environmental impacts, and asking all customers of a load serving entity to share in the costs of greening additional demand brought on by large commercial customers raises equity concerns. Numerous data centers, many with just under 100 MW loads, are being proposed in SVP territory, with several already under construction or about to start. Without a requirement that these data center facilities bear responsibility for ensuring that their electricity use would not impede the attainment of the state's GHG emissions reduction goals, including SB 100, it is unclear how the state is going to make the increasingly steep reductions needed to avert the most catastrophic climate change scenarios. Staff has confirmed with SVP that the applicant can participate in SVP's LCRE program to purchase 100 percent renewable electricity. Therefore, to conclude the project would not impede the attainment of the state's GHG emissions reduction goals, staff recommends the implementation of mitigation measure **GHG-2**, which requires the project applicant to participate in SVP's LCRE program or other renewable energy program that accomplishes the same objective as SVP's LCRE program for 100 percent carbon-free electricity or purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity.

Other project activities, such as mobile sources and building operation, would be similar to those of other commercial or industrial projects subject to development review by the City. The project would comply with all applicable city and state green building standards measures, including California Code of Regulations, Title 24, Part 6, baseline standard requirements for energy efficiency, based on the 2019 Energy Efficiency Standards

requirements, and the 2019 California Green Building Standards Code, commonly referred to as CALGreen (California Code of Regulations, Title 24, Part 11).

The applicant would use a low GWP refrigerant, R-513a, in the air-cooled chillers (GI Partners 2022f, p.9). The use of the proposed low GWP refrigerant would be allowed under the HFC prohibition regulation and the HFC sale and distribution prohibition (SB 1206).

With implementation of mitigation measure **GHG-2**, the operation of the project would not conflict with regulations adopted to achieve the goals of the scoping plan. Accordingly, the project's operational activities would not interfere with the state's ability to achieve long-term GHG emissions reduction goals.

Regional Plans, Policies, and Regulations

Bay Area 2017 Clean Air Plan. BAAQMD's Bay Area 2017 Clean Air Plan (BAAQMD 2017a) includes Energy and Climate Measure (ECM)-1 – Energy Efficiency, and due to the relatively high project electrical demand, energy efficiency measures are included in the design and operation of the onsite electrical and mechanical systems, consistent with this measure. Mitigation measure **GHG-2** requires the project applicant to participate in SVP's LCRE program or other renewable energy program that accomplishes the same objective as SVP's LCRE program for 100 percent carbon-free electricity or purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity. These features would be consistent with BAAQMD's Bay Area 2017 Clean Air Plan measure to Decarbonize Electricity Generation (EN1).

BAAQMD CEQA Thresholds of Significance. Under the BAAQMD's 2022 CEQA thresholds of significance for land use projects, a CEQA lead agency can conclude that a project would not make a cumulatively considerable contribution to global climate change if the project is designed and built to be consistent with the requirements of either Option A or Option B of the BAAQMD thresholds (BAAQMD 2022, p.2). In Option A, projects must include, at a minimum, the project design elements of buildings and transportation. In Option B, projects must be consistent with a local GHG reduction strategy that meets the criteria under CA CEQA Guidelines Section 15183.5(b) (BAAQMD 2022, page2). Because the proposed project includes a General Plan Amendment, it cannot rely on a GHG Reduction Strategy as outlined in Option B of the BAAQMD thresholds. As a result, the project's consistency with the requirements of Option A of the BAAQMD thresholds would be used to determine the significance of the project's operational GHG emissions (GI Partners 2022e, p. 141 and 142). Discussions of the project's consistency with BAAQMD thresholds are provided below in **Table 4.8-5**.

TABLE 4.8-5 CONSISTENCY WITH BAAQMD THRESHOLDS FOR LAND USE PROJECTS	
BAAQMD Threshold Project Consistency	**BAAQMD Threshold Project Consistency**
Buildings	
a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).	Consistent. The project would not include natural gas appliances or natural gas plumbing.
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.	Consistent. As described in further detail in Section 3.6 Energy, the project would not result in any wasteful, inefficient, or unnecessary energy usage.
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	Consistent. As described in further detail in Section 3.17 Transportation, project generated VMT would be 15 percent below the countywide average with implementation of Transportation Demand Management (TDM) measures included in the project.
b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.	Consistent. The applicant is working with the City to include the necessary electric vehicle parking spaces to comply with the requirements of CALGreen Tier 2.

Source: GI Partners 2022e, Table 3.8-1

Plan Bay Area 2040/SB 375. MTC and ABAG developed an SCS with the adopted Plan Bay Area 2040 to achieve the Bay Area's regional GHG emissions 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. Mitigation measure **TRANS-1** would require the applicant implement a Transportation Demand Management (TDM) program to reduce vehicle trips and vehicle miles travelled (VMT) and thus would not contribute to a substantial increase in passenger vehicle travel within the region (see **Section 4.17 Transportation** for more information) (GI Partners 2022e, Table 3.8-1).

Local Plans, Policies, and Regulations

City of Santa Clara General Plan. The City adopted the General Plan to accommodate planned housing and employment growth through 2035. As part of the City's General Plan Update in 2011, new policies were adopted that address the reduction of GHG emissions during the planning horizon of the General Plan. In addition to the reduction

measures in the CAP, the General Plan includes goals and policies to address sustainability aimed at reducing the city's contribution to GHG emissions. For the project, the implementation of policies that increase energy efficiency or reduce energy use would effectively reduce indirect GHG emissions associated with energy consumption. The consistency of the project with the applicable land use, air quality, energy, and water policies in the General Plan is analyzed in **Table 4.8-6** below. As shown, the project would be consistent with the applicable sustainability policies in the General Plan.

TABLE 4.8-6 PROJECT CONSISTENCY WITH GENERAL PLAN SUSTAINABILITY POLICIES RELATED TO INDIRECT AND NON-STATIONARY SOURCES EMISSIONS

Emission Reduction Policies	Project Consistency
Air Quality Policies	
5.10.2-P3 Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.	With implementation of **GHG-2**, the project would participate in SVP's LCRE program or other renewable energy program that accomplishes the same objective as SVP's LCRE program for 100 percent carbon-free electricity or purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity.
5.10.2-P4 Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.	
Energy Policies	
5.10.3-P1 Promote the use of renewable energy resources, conservation, and recycling programs.	The proposed project would include recycling services and participate in the City's Construction and Demolition Debris Recycling Program. The project would utilize lighting control to reduce energy usage for new exterior lighting and air economization for building cooling. Water efficient landscaping and ultra-low flow plumbing fixtures in the building would be installed to limit water consumption. With implementation of **GHG-2**, the project owner would participate in the SVP's LCRE program or other renewable energy program that accomplishes the same objective as SVP's LCRE program for 100 percent carbon-free electricity or purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity associated with the project. Besides, with implementation of **GHG-1**, the applicant would use renewable diesel for 100 percent of total energy use by the gensets, and only use ultra-low sulfur diesel as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel.
5.10.3-P4 Encourage new development to incorporate sustainable building design, site planning, and construction, including encouraging solar opportunities.	
5.10.3-P5 Reduce energy consumption through sustainable construction practices, materials, and recycling.	
5.10.3-P6 Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.	
5.10.3-P8 Provide incentives for LEED certified, or equivalent development.	
5.3.1-P10 Provide opportunities for increased landscaping and trees in the community, including requirements for new development to provide street trees and a minimum 2:1 on- or off-site replacement for trees removed as part of the	The project would plant trees that would provide shading throughout the site to reduce the heat island effect.

TABLE 4.8-6 PROJECT CONSISTENCY WITH GENERAL PLAN SUSTAINABILITY POLICIES RELATED TO INDIRECT AND NON-STATIONARY SOURCES EMISSIONS

Emission Reduction Policies	Project Consistency
proposal to help increase the urban forest and minimize the heat island effect.	
Transportation Policies	
5.3.1-P14 Encourage TDM strategies and the provision of bicycle and pedestrian amenities in all new development greater than 24 housing units or more than 10,000 non-residential square feet, and for City employees, in order to decrease use of the single-occupant automobile and reduce vehicle miles traveled, consistent with the Climate Action Plan.	With implementation of **TRANS-1**, the applicant would be required to prepare a TDM program. This program provides incentives and services to encourage alternatives to personal motorized vehicle trips.
5.8.5-P1 Require new development and City employees to implement TDM programs that can include site-design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage and recreational facilities.	
5.8.5-P5 Encourage TDM programs that provide incentives for the use of alternative travel modes to reduce the use of single-occupant vehicles.	
Water Policies	
5.10.4-P7 Require installation of native and low-water consumption plant species in new development and public spaces to reduce water usage.	The project would use water efficient landscaping with low-water usage plant material to minimize irrigation requirements.

Source: GI Partners 2022e, Table 3.8-4

City of Santa Clara Climate Action Plan. Discussions of the project's conformance with the applicable reduction measures for new development in the 2022 CAP are provided below in **Table 4.8-7**.

TABLE 4.8-7: SUMMARY OF APPLICABLE CLIMATE ACTION PLAN MEASURES AND PROJECT CONSISTENCY

Applicable Climate Action Plan Measures		Project Compliance
Natural Systems and Water Resources		
N-1-3	Urban Forest Partnership: Promote healthy, well-managed urban forests by participating in the County's Urban Forest Alliance partnership.	The applicant proposes to remove 48 trees and install new landscaping on site, including tree plantings at ratios required by the City of Santa Clara's Tree Ordinances (SCCC 12.35.090(C)(7)).
N-3-3	Water-Efficient landscaping requirements: Expand requirements for water-efficient landscaping practices, including requirements for cooling (trees, green roofs) and drought-tolerant native plants.	The project proposes to integrate water conservation practices, such as efficient landscapes and high-efficiency irrigation systems.
N-3-5	Recycled Water Connection Requirements: Require the use of recycled water for all	There is a recycled water pipeline located at the intersection of Walsh Avenue and Northwestern Parkway, approximately 2,600

TABLE 4.8-7: SUMMARY OF APPLICABLE CLIMATE ACTION PLAN MEASURES AND PROJECT CONSISTENCY

Applicable Climate Action Plan Measures		Project Compliance
	non-potable uses where recycled water is available, per City Code 13	feet to the southeast of the subject property. The project would extend the recycled water line as a primary source of water for cooling and landscaping. The data center would be designed to use up to 0.5 AFY of recycled water provided by the City of Santa Clara.
Materials and Consumption		
M-1-1	Compliance with State Solid Waste Ordinance: Comply with state solid waste laws, including AB 1826, AB 341, and SB 1383. These bills require that businesses, public entities, and communities expand recycling and composting infrastructure to meet the state's ambitious landfill waste reduction targets. AB 1826 requires commercial businesses that generate a certain level of organic waste arrange for recycling services for that waste. AB 341 similarly requires that commercial businesses and public entities that generate a certain level of weekly waste have a recycling program in place. SB 1383 requires that California reduce waste to landfills by 75% by 2025 and rescue 20% of surplus edible food in phases beginning in 2022.	The proposed project would include recycling services and participate in the City's Construction and Demolition Debris Recycling Program.
Transportation and Land Use		
T-1-2	EV Charging for all New Construction: Implement EV charging requirements as specified in the adopted 2021 Reach Codes.	The project would provide at least four electric vehicles parking spaces (of which one is EV van accessible), and six clean air vehicle parking spaces.
Community Resilience and Well-Being		
C-2-3	High-Albedo Parking Lots: As part of conditions of approval, require new parking lots to be surfaced with more sustainable pavement materials (e.g., high-albedo permeable pavement, e-pavement, etc.) to reduce heat gain during extreme heat events, reduce energy consumption related to cooling, and reduce stormwater runoff.	Per City requirements, the proposed surface parking would be paved with sustainable pavement, such as high-albedo permeable pavement or e-pavement.
Buildings and Energy		
B-1-5	Reach Codes for New Construction: Implement all-electric codes, with exceptions. The All-electric building electrification with electric vehicle charging reach code ordinance would apply to all new building permit applications per City Ordinance 2034.	The project would comply with the City's Reach Codes and would not use natural gas. The project would provide four electric vehicles parking spaces.

TABLE 4.8-7: SUMMARY OF APPLICABLE CLIMATE ACTION PLAN MEASURES AND PROJECT CONSISTENCY

Applicable Climate Action Plan Measures		Project Compliance
B-1-7	Carbon-Neutral Data Centers: Require all new data centers to operate on 100% carbon neutral energy, with offsets as needed. This requirement does not apply to data centers with planning application approval within six months of the CAP adoption date. Use offsets as needed to help ease the transition to carbon neutral energy but ensure that reducing emissions remains the main priority.	With implementation of **GHG-2**, the project would participate in SVP's LCRE program or other renewable energy program that accomplishes the same objective as SVP's LCRE program for 100 percent carbon-free electricity or purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity.
Maximize Renewable Energy Generation and Storage Capacity		
B-3-6	Alternative Backup Generators: Provide information and technical assistance to data centers and other large commercial users to transition from diesel to lower-carbon backup generators (e.g., renewable diesel). Consider promoting the use of non-diesel alternatives as alternative back-up power source for data centers when SVP service is unavailable.	As discussed in Section 7.0 Alternatives, GI Partners evaluated the use of biodiesel and renewable diesel as replacement for the CARB diesel proposed for use in the BBBGF. Neither alternative provides a highly reliable source of fuel, nor provides any demonstrable reduction in emissions.

Source: GI Partners 2022e, Table 3.8-3

Conclusion

Less Than Significant with Mitigation Incorporated. With the incorporation of the project features and mitigation measures **GHG-1** and **GHG-2**, GHG emissions related to the project would be consistent with the applicable plans and policies adopted to reduce GHG emissions and would comply with all regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The potential for the project to conflict with an applicable plan, policy, or regulation for GHG emissions reductions would be less than significant.

4.8.4 Mitigation Measures

GHG-1: The project owner shall use renewable diesel for 100 percent of total energy use by the emergency backup generators, and only use ultra-low sulfur diesel (ULSD) as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. The City of Santa Clara Community Development Department (CDD) may grant temporary relief from the 100 percent renewable diesel requirement if the project owner can demonstrate a good faith effort to comply with the requirement and that compliance is not practicable. The project owner shall provide an annual report of the status of procuring and using renewable diesel to the director, or director's designee, of the City of Santa Clara CDD demonstrating compliance with the mitigation measure.

GHG-2: The project owner shall participate in SVP's Large Customer Renewable Energy (LCRE) Program or other renewable energy program that accomplishes the same

objective as SVP's LCRE Program for 100 percent carbon-free electricity, or (2) purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity.

During operation, the project owner shall provide documentation to the director, or director's designee, of the City of Santa Clara Electric Utility Department of initial enrollment and shall submit annual reporting to the director, or director's designee, of the City of Santa Clara Electric Utility Department documenting either continued participation in SVP's LCRE Program of documentation that alternative measures continue to provide 100 percent carbon-free electricity as verified by an independent third-party auditor specializing in greenhouse gas emissions.

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4.9 Hazards and Hazardous Materials

This section describes the environmental setting and regulatory background and discusses impacts associated with the construction and operation of the project with respect to hazards and hazardous materials.

HAZARDS AND HAZARDOUS MATERIALS Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

4.9.1 Environmental Setting

Hazardous Materials

Demolition and Construction. The proposed project would involve limited transport, storage, use, and disposal of hazardous materials during demolition and construction activities. Some examples of hazardous materials handling during demolition and construction would include the transport of fuels, lubricating fluids, and solvents

associated with construction equipment, as well as the transport of potentially contaminated soils excavated from the project site or from the recycled water pipeline extension. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination.

The proposed project would include demolition of buildings and infrastructure that would not be reused for the proposed project. This would include demolition of the existing office building on the project site and removal of existing hardscaping and paving prior to site grading. Initial estimates of the grading of the site and excavation for foundations show a cut of approximately 16,000 cubic yards.

Operation. Some oils and lubricants could be stored on-site for maintenance of mechanical equipment. Additionally, during operation of the backup generators the backup generators would use diesel fuel which would be stored in integrated tanks, a 12,000-gallon diesel fuel tank at the base of a stacked pair and a 500-gallon diesel fuel tank installed within the upper generator of the stacked pair, for a combined diesel fuel storage capacity of approximately 200,000 gallons for all the generators (GI Partners 2022e). Approximately 5,700 gallons for each generator are required for 24-hour operation.

Diesel fuel would be delivered on an as-needed basis in a compartmentalized tanker truck with maximum capacity of 8,500 gallons. Each stacked generator pair would also include a 400-gallon Diesel Exhaust Fluid (DEF) tank at ground level that can be filled in place from drums. DEF contains urea and is used as part of the diesel engine combustion process to meet the emissions requirements. The project applicant states it will prepare a Spill Prevention, Control and Countermeasure Plan (SPCC) to address the storage, use and delivery of diesel fuel for the generators.

Hazardous Waste and Substances Sites

Existing and past land use activities are commonly used as indicators of sites or areas where hazardous material storage and use may have occurred or where potential environmental contamination may exist. For example, many historic and current industrial sites have soil or groundwater contaminated by hazardous substances. Other hazardous materials sources include leaking underground tanks in commercial and rural areas, contaminated surface runoff from polluted sites, and contaminated groundwater plumes. Current and former agricultural properties commonly have herbicide, pesticide, and/or fumigant soil contamination.

The project site is located within the city of Santa Clara in Santa Clara County in an urban environment consisting primarily of a mix of light industrial, commercial, business park, and residential uses. Properties to the north, west, and east of the project site are primarily light industrial facilities, business parks, and warehouses. Properties south of the project site consist primarily of medium to high density residential.

Ground disturbance during construction would be susceptible to potentially encountering environmental contamination if located in the vicinity of hazardous material or environmentally contaminated sites. The project owner hired AEI Consultants (AEI) to conduct a Phase I Environmental Site Assessment (ESA) of the project site (completed in February 2021) to determine the location of hazardous wastes and hazardous material release sites within American Society for Testing and Materials standards and to evaluate the potential for environmental concerns within and immediately adjacent to the project site (GI Partners 2022a & b, Appendix E). The analysis provided by AEI included within the Phase I ESA a search of Environmental Data Resources, Inc.'s proprietary database related to generation, storage, handling, transportation, treatment of wastes, and the remediation of contaminated soil and groundwater sites and historic documents from EDR. AEI included searches of the State Water Resources Control Board's (SWRCB) GeoTracker database, and the California Department of Toxic Substance Control's (DTSC) Envirostor database.

In addition to the Phase I ESA conducted by AEI in 2021, several previous Phase I ESAs for the project site and an adjoining site have been conducted by others (GI Partners 2022a, Appendix E). The previous Phase I ESAs that were reviewed by AEI in the process of conducting their Phase I ESA are:

- EC2, 2003. Phase I Environmental Site Assessment Conclusionary Letter, 2805 Bowers Avenue, Santa Clara, CA;
- E2C, 2003. Phase I Environmental Site Assessment, 2805 Bowers Avenue, Santa Clara, CA; and
- Partner, 2017. Phase I Environmental Site Assessment Report, Walsh Bowers Office, 2710-2790 Walsh Avenue and 2845-2855 Bowers Avenue, Santa Clara, California 95051

The Phase I ESA by AEI indicates that the project area historically consisted mainly of agricultural land (orchards and row crops) with widely spaced rural residences. From at least 1939 to 1968 the project site was farmed with row crops and the recycled water pipeline route was primarily orchards, with a creek along the eastern boundary of the site (GI Partners 2022a & b, Appendix E). By the mid-1970s, there were only small patches of agricultural land interspersed between vacant lots, and light industrial and residential properties. The project site was developed between 1974 and 1975. By 1982, the entire area was developed as light industrial and commercial with residential properties to the south and the creek that previously ran along the eastern edge of the project site was no longer present. The previous Phase I ESAs did not identify any Recognized Environmental Conditions (RECs), Controlled RECs, or Historical RECs as part of their assessment. However, the following environmental concerns were noted: onsite historical use of chlorinated solvents, potential for asbestos containing materials (ACMs), and a release case, identified at the project site and discussed below.

The potential for a vapor encroachment condition at the project site cannot be ruled out due to the lack of documentation noted in the 2017 Partner Phase I ESA. Therefore, vapor intrusion could be an issue of concern in connection with existing structures on the project site. The AEI Phase I ESA concluded that based on reported subsurface contamination by volatile organic compounds (VOCs) at the project site for which no documentation is available and paired with the likelihood of a vapor encroachment condition the site represents a REC (GI Partners 2022e).

Versatec, which changed its name to Xerox Engineering Systems (XES) in the early 1990s, occupied the project site from 1975 to 1992. The current building on the site, previously known as the XES building or as Building 1, was constructed in 1975. The building was part of a former complex of five buildings forming the Versatec facility. The facility was used for the manufacturing of electronic printers and plotters. XES occupied the building on the project site until December 1992, and the building remained vacant until 1995. From 1995 to 2002 National Semiconductor, a semiconductor manufacturer, occupied the building on the project site. The building on the project site has been an office and light industrial building with several businesses present since 2004 (GI Partners 2022a, Appendix E).

Associated with the building's former printed circuit board lab was a waste treatment area located outside the facility on the southern side of the building. A 6,000-gallon capacity epoxy seal-coated concrete vault containing a 1,200-gallon tank that was used for pH neutralization of process liquids was installed at the project site in 1975. The underground storage tank was noted to be permanently closed on-site in the 1993 Underground Storage Tank (UST) Permit Application (GI Partners 2022a & b, Appendix E).

The project site is identified in the SWRCB GeoTracker database as a closed Cleanup Program Site (GI Partners 2022a & b, Appendix E; SWRCB 2023). Review of the GeoTracker database by AEI indicated that both soil and groundwater were impacted by a release at the site. Potential contaminants of concern included 1,1,1-trichloroethane, freon, vinyl chloride, dichloroethane and dichloroethene. The case was granted closure on December 3, 2015. However, limited information is available regarding site assessment and remedial activities at the site. In a 1993 letter from the Regional Water Quality Control Board (RWQCB) to XES Incorporated, the RWQCB requested that the wells be sampled semi-annually, and samples be analyzed using United States Environmental Protection Agency (U.S. EPA) Method 8010. The RWQCB concluded that due to the potential presence of VOCs in the groundwater under the site, it was appropriate to continue to monitor the site's three monitoring wells. The RWQCB did not state the specific location of the three monitoring wells (GI Partners 2022a, Appendix E). However, the 2003 E2C Phase I ESA noted that SCVWD confirmed that the three former onsite monitoring wells installed in 1991 had been decommissioned (GI Partners 2022a and b, Appendix E).

The AEI Phase 1 ESA states that 1995 lease records associated with the subject properties to the north and northeast indicated that soil and groundwater at these properties were impacted by the former Xerox operations. Xerox performed soil and groundwater

remediation at the project site and case closure for the release was reportedly pending in 1995 (GI Partners 2022e). No additional information on the sampling, remediation, or closure were reportedly available for review in the regulatory records in the previous report. The site is currently listed as case closed (SWRCB 2023; GI Partners 2022a, Appendix E).

The recycled water line extension alignment is located along existing city streets (Bowers and Walsh Avenues) which traverse through areas of commercial and light industrial use. Two SWRCB GeoTracker listings are located in close proximity to the alignment: the XES Incorporated Case Closed Cleanup Site Program site listing at the project site (discussed above), and an Intel Corporation Case Closed leaking underground tank site from 1996 for a formerly leaking diesel tank which was removed in 1988 (SWRCB 2023).

Existing Onsite Equipment

The project site has several existing pieces of equipment that could contain hazardous materials. A transformer located onsite could contain polychlorinated biphenyls (PCBs). PCBs were used historically in electrical equipment such as transformers, fluorescent lamps ballasts, and capacitors. AEI did not observe evidence of spills, staining, or leaks on or around the pad-mounted transformer during their site reconnaissance (GI Partners 2022a, Appendix E). Based on the good condition of the equipment, the transformer is not expected to have contributed to any environmental contamination.

The current building on the project site is equipped with two hydraulic elevators which may contain hydraulic fluid containing PCBs. Based on the age of the building, mid-1970s, the potential exists that PCB containing hydraulic fluid may be present. No evidence of stains or leaks was observed at the base of the equipment during AEIs site reconnaissance. Based on the good condition and regular maintenance of the elevators, they are not expected to have contributed to environmental contamination (GI Partners 2022a, Appendix E).

Airports

The San José Mineta International Airport (formerly Norman Y. Mineta San Jose International Airport) is located approximately 1.8 miles east of the project site. A review of the Santa Clara County Comprehensive Land Use Plan for the airport indicates that the project site is not beneath a mapped flight path, is located outside of the 65 decibels (dB) or greater Aircraft Noise Contours, nor is it within a designated airport safety zone. The project site is within a Federal Aviation Regulation (FAR) Part 77 Surface zone with maximum structure height of 212 feet above mean sea level (SCCALUC, 2016).

Schools

The nearest school to the project site is Bracher Elementary School located approximately 0.26 miles southeast of the southern end of the project site. Therefore, the project site is not within one-quarter mile of an existing school.

Emergency Evacuation Routes

The Santa Clara Local Hazard Mitigation Plan (Santa Clara County 2017) identifies hazards and provides risk assessments for the potential natural hazards that could impact the city and the county. The plan does not include any specific mapping or delineation of emergency evacuation or access routes. No designated evacuation routes are identified near the project site.

Wildfire Hazards

The California Department of Forestry and Fire Protection (CAL Fire) identifies and maps areas of significant fire hazards based on fuels, terrain, and other relevant factors. The maps identify this information as a series of Fire Hazard Severity Zones, which are progressively ranked in severity as un-zoned, moderate, high, and very high. Wildland fire protection in California is the responsibility of either the state, local, or federal government. State Responsibility Areas (SRAs) include those areas where the financial responsibility of preventing and suppressing fires falls primarily on the state. Local Responsibility Areas (LRAs) include incorporated cities, unincorporated county areas, cultivated agriculture lands, and portions of the desert. LRA Fire Hazard Severity Zones are mapped as either Very High Fire Hazard Severity Zones (VHFHSZ) or as Non-Very High Fire Hazard Severity Zones. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local governments (OSFM 2022). Federal Responsibility Areas (FRA) are those located on federal lands not otherwise included in SRAs and LRAs. The project would be located within the city of Santa Clara in the county of Santa Clara.

The Fire Hazard Severity Zones Map for Santa Clara County (OFSM 2022) indicates that the project site is located in an LRA and is not located in a VHFHSZ. The proposed project is located in a fully urbanized developed area with no wildlands at or near the project site. The project site is serviced by the city of Santa Clara Fire Department. For more information on wildfire hazards, see **Section 4.19 Wildfire.**

Regulatory Background

Hazardous substances are defined by federal and state regulations that aim to protect public health and the environment. Hazardous materials are those that have certain chemical, physical, or infectious properties. Hazardous substances are defined in the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) section 101(14), and also in Title 22, California Code of Regulations, section 66260.10 and California Health and Safety Code, section 25501, which defines a hazardous material.

For this analysis, soil that is excavated from a site containing hazardous materials would be considered a hazardous waste if it exceeded specific Title 22, California Code of Regulations criteria, criteria defined in CERCLA, or other relevant federal regulations (see definition of hazardous waste, Title 22, Cal. Code Regs., § 66261.3). Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if

excavation of these materials occurs; remediation may also be required if certain other activities occur. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies with jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

Federal

Resource Conservation and Recovery Act. The federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act.

Comprehensive Environmental Response, Compensation, and Liability Act. Congress enacted the federal CERCLA, including the Superfund program, on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan. The National Contingency Plan provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The National Contingency Plan also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

Clean Water Act. The Clean Water Act (CWA) is the principal federal statute protecting navigable waters and adjoining shorelines from pollution. The law was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. Since its enactment, the CWA has formed the foundation for regulations detailing specific requirements for pollution prevention and response measures. The U.S. EPA implements provisions of the CWA through a variety of regulations, including the National Contingency Plan, as described above, and the Oil Pollution and Prevention Regulations. Implementation of the CWA is the responsibility of each state.

As part of the CWA, the U.S. EPA oversees and enforces the Oil Pollution Prevention regulation (Title 40, Code of Federal Regulations (CFR), Part 112), which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement SPCC Plans. A facility is subject to SPCC regulations if the total above ground oil storage capacity exceeds 1,320 gallons, or the underground

oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "navigable waters" of the United States. The rule specifies that proactive, and not passive, measures be used to respond to oil discharges.

National Pollutant Discharge Elimination System. The National Pollutant Discharge Elimination System (NPDES) permit program, created in 1972 by the CWA, helps address water pollution by regulating point sources that discharge pollutants to waters of the United States. The permit provides two levels of control: technology-based limits and water quality-based limits (if technology-based limits are not sufficient to provide protection of the water body). Under the CWA, U.S. EPA may authorize state, tribal, and territorial governments to administer the NPDES permit program, enabling them to perform many of the permitting, administrative, and enforcement aspects of the NPDES program. In states authorized to implement CWA programs, U.S. EPA retains oversight responsibilities. Within the state of California, the SWRCB issues both general permits and individual permits under the NPDES permit program.

Department of Transportation. The United States Department of Transportation (DOT) is the primary federal agency responsible for regulating the proper handling and storage of hazardous materials during transportation (49 CFR. §§ 171-177 and 350-399).

Toxic Substance Control Act. The Toxic Substance Control Act (TSCA) of 1976 authorizes the U. S. EPA to regulate and screen all chemicals produced or imported into the United States to prevent unreasonable risks to health and the environment. The TSCA provides the U. S. EPA with the authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides. The TSCA addresses the production, importation, use, and disposal of specific chemicals, including PCBs.

As of January 1, 1977, pursuant to 15 U.S.C 2605(e)(2)(A), the manufacture, process, or distribution in commerce or use of any PCB in any manner other than in a totally enclosed manner was prohibited. U.S. EPA regulation 40 CFR Part 761 defines three categories for classifying equipment that may contain PCBs: Non-PCB with less than 50 parts per million (ppm) of PCBs; PCB-Contaminated with PCBs between 50 and 500 ppm; and PCB-Containing with PCBs of greater than 500 ppm. Actual material samples need to be collected to determine if transformers are PCB-containing. Transformers installed prior to 1977 may be PCB containing while transformers installed after 1977 are unlikely to be PCB containing. Federal Regulations (40 CFR 761 Subpart G) require any release of material containing >50 ppm PCB and occurring after May 4, 1987, to be cleaned up by the transformer owner following the U. S. EPA's PCB spill cleanup policy.

Federal Aviation Administration. Title 14, Part 77.9 of the CFR requires Federal Aviation Administration (FAA) notification for any construction or alteration of navigable airspace exceeding 200 feet above ground level. It also requires notification for

construction or alterations within 20,000 feet of an airport with a runway more than 3,200 feet in length if the height of the construction or alteration exceeds a slope of 100 to 1 extending outward and upward from the nearest point of the nearest runway of the airport. If a project's height exceeds 200 feet or exceeds the 100:1 surface, the project applicant must submit a copy of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA.

State

California Environmental Protection Agency. The California Environmental Protection Agency (Cal EPA), created in 1991, unified California's environmental authority in a single cabinet-level agency and brought the California Air Resources Board (CARB), SWRCB, RWQCBs, Integrated Waste Management Board, DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies under the Cal EPA "umbrella" provide protection of human health and the environment and ensure the coordinated deployment of state resources. Their mission is to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality.

The California Hazardous Waste Control Law. Cal EPA administers the California Hazardous Waste Control Law to regulate hazardous wastes. The Hazardous Waste Control Law lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

Department of Toxic Substances Control. DTSC is a department within Cal EPA and is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

California Occupational Safety and Health Administration. California Occupational Safety and Health Administration (Cal OSHA) is the primary agency responsible for worker safety related to the handling and use of chemicals in the workplace. Cal OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (California Code of Regulations Title 8, Chapter 4, Subchapter 7). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. Cal OSHA is also the primary agency that oversees worker safety as it relates to exposure to dusts, fumes, mists, vapors, and gases (California Code of Regulations Title 8, Chapter 4, Subchapter 4, Article 4) which includes, but is not limited to, asbestos, lead, and concrete or masonry dust.

California Department of Public Health (CDPH). The CDPH oversees the Lead Related Contractor (LRC) program certification requirements and work practice standards (California Code of Regulations Title 17, Chapter 8, Article 1). LRC certification means that CDPH has evaluated and approved a person's qualifications to perform lead-related construction work in residential and public buildings. CDPH evaluates applicants to make sure they have completed State-approved training and have relevant experience and education to perform lead work. CDPH grants five kinds of certificates to individuals: Lead Inspector/Assessor, Lead Project Monitor, Lead Sampling Technician, Lead Supervisor, and Lead Worker. Each certificate has different training, education, and experience requirements. The CDPH provides guidelines and forms for required safe work practices related to led hazards. The CDPH requires all construction workers and supervisors who will be doing lead inspections, assessments, or removal to become LRC certified.

Porter-Cologne Water Quality Act. This state law provides a comprehensive water quality management system for the protection of California waters. The act designates the SWRCB as the ultimate authority over State water rights and water quality policy and also established nine RWQCBs to oversee water quality on a day-to-day basis at the local and regional level. The RWQCBs have the responsibility of granting NPDES permits and setting waste discharge requirements for stormwater runoff from construction sites. The proposed project's NPDES permits in California would be under the jurisdiction of the San Francisco Bay RWQCB.

Department of California Highway Patrol. Department of California Highway Patrol is the primary agency responsible for enforcing the regulations related to the transport of hazardous materials on California roads and highways (Title 13, Cal. Code Regs., §§ 1160-1167).

The Aboveground Petroleum Storage Act Program. The aboveground program requires tank facilities storing greater than 1,320 gallons of petroleum that stores any amount of petroleum, to develop and implement the SPCC Plan requirements (CFR 2023). A tank facility is any tank or tanks that are aboveground, including connected piping, that contain petroleum and are used by an owner or operator at a single location or site, is in secondary containment, and it is used to hold oil. The Certified Unified Program Agency (CUPA) regulates businesses storing petroleum in aboveground containers or tanks (California Health & Safety Code, Chapter 6.67, Sections 25270-25270.13). The Santa Clara Community Risk Reduction Division is the CUPA for the city of Santa Clara (City).

Local

San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP) Order No. R2-2015-0049. The SWRCB has found that there is a reasonable potential that municipal stormwater discharges in the San Francisco Bay Region cause or may cause or contribute to the following pollutants exceeding water quality standards: mercury, PCBs, furans, dieldrin, chlordane, DDT, trash, selenium; pesticide associated toxicity, and trash. Therefore, pollutant control actions and further pollutant impact assessments by Permittees of the San Francisco Bay Region MRP are required as set forth

in the MRP. The San Francisco Bay Region MRP also requires that permittees develop an assessment methodology for applicable structures planned for demolition to ensure PCBs do not enter municipal storm drain systems. Per provision C.12.f. buildings constructed between 1950 and 1980 that are proposed for demolition must be screened for the presence of PCBs prior to the issuance of a demolition permit.

Santa Clara County Operational Area Hazard Mitigation Plan. The plan includes a risk assessment that identifies the natural hazards and risks that can impact a community based on historical experience, estimates the potential frequency and magnitude of disasters, and assesses potential losses to life and property. The plan also includes developed mitigation goals and objectives as part of a strategy for mitigating hazard-related losses.

Santa Clara Fire Department, Community Risk Reduction Division. Senate Bill 1082 (Calderon, Ch. 418, Statutes of 1993) established a unified hazardous waste and hazardous materials management regulatory program, known as the Unified Program. The Unified Program is implemented at the local level by local government agencies certified by Cal EPA, known as CUPA. CUPA agencies implement all the Unified Program elements and serve as a local contact for area businesses. The CUPA for the project area is the Santa Clara Fire Department Community Risk Reduction Division (SCCRRD). As CUPA for the City, the SCCRRD administers the following California programs:

- Hazardous Waste Generator Program - This program applies to businesses and facilities that generate hazardous waste in any quantity, consolidates hazardous waste generated at a remote site, or recycles more than 100 kilograms/month of excluded or exempted recyclable materials. The Santa Clara Fire Department Hazardous Materials Division (HMD) maintains records and conducts inspections of hazardous waste generators within the city of Santa Clara. Businesses that generate hazardous waste are required to submit a "Hazardous Waste Generator Permit Application" when they move into the city or begin generating hazardous waste. (A properly filled out and submitted Hazardous Waste Materials Business Plan may be used in lieu of the Hazardous Waste Generator Permit Application.)
- Onsite Hazardous Waste Treatment - The HMD maintains records and conducts inspections of hazardous waste generators who treat waste on-site in a Fixed Treatment Unit under Permit by Rule, Conditional Authorization, and Conditional Exemption. The Division currently does not inspect Transportable Treatment Units, full permit facilities, or standardized permit facilities.
- Underground Storage Tank (UST) - SCCRRD implements this program to prevent discharges and releases of hazardous substances from USTs. The HMD maintains records of and inspects underground storage tanks. All underground storage tanks are required to meet current state regulations. Permits are required for the installation or removal of underground storage tanks.
- Aboveground Storage Tank SPCC Plan - As the CUPA for the City, the HMD is authorized to implement the California Aboveground Petroleum Storage Act (APSA).

The HMD inspects facilities that store petroleum products in aboveground tanks with a total petroleum storage quantity at or above 1,320 gallons for compliance with the (APSA) and referenced sections of the federal SPCC rule.

- Hazardous Materials Business Plan (HMBP) - Facilities that store any hazardous material at or above the State-defined thresholds, generally 55 gallons of a liquid, 200 cubic feet of a gas, and 500 pounds of a solid, are subject to a HMBP. The SCCRRD oversees the preparation and submittal of the HMBP. The HMBP must be kept on site in a readily accessible area. The company must also review the HMBP at least once every two years. Copies of the inventory statement, site map, and facility information included in the HMBP must be submitted to the HMD annually.
- California Accidental Release Prevention Program - Businesses that handle more than the State threshold quantity of a regulated substance must develop a Risk Management Plan (RMP); an RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The HMD implements the California Accidental Release Prevention Program within the city of Santa Clara. The program requires an assessment of the offsite hazard potential, and the implementation of a program to minimize the risk of release. Companies which are required to prepare a RMP for the U.S. EPA pursuant to Title 40, CFR, Part 68, are also required to submit a copy of their RMP to the Santa Clara Fire Department HMD.

Santa Clara County Department of Environmental Health (SCCDEH) Hazardous Materials Compliance Division (HMCD). The HMCD administers the Site Mitigation Program which oversees the Local Oversight Program and the Site Cleanup Program. The Local Oversight Program oversees the cleanup of sites contaminated by petroleum from UST releases throughout Santa Clara County. The Site Cleanup Program oversees the cleanup of properties contaminated by hazardous materials not exclusively associated with petroleum USTs. California Health and Safety Code, sections 101480 through 101490 state that a responsible party for a contaminated site may request local agency oversight of site assessment and remediation activities. In addition, the HMCD administers the Hazardous Materials Storage Ordinance (County Ordinance No. NS-517.31) and the Toxic Gas Ordinance (County Ordinance No. NS-517.44).

Santa Clara Emergency Operations Plan (EOP). In June 2016, the City adopted an EOP to address the planned response of the City to emergency situations associated with natural disasters and technological incidents, as well as chemical, biological, radiological, nuclear and explosive emergencies. The EOP establishes the emergency organization, assign tasks, specifies policies and general procedures, and provides for coordination of planning efforts for emergency events such as earthquake, flooding, dam failure, and hazardous materials responses.

City of Santa Clara General Plan. The Santa Clara 2010-2035 General Plan includes policies that address hazards and hazardous materials during the planning horizon of the

General Plan. The following goals, policies, and actions are applicable to the proposed project:

- 5.10.5-P22 - Regulate development on sites with known or suspected contamination of soil and/or groundwater to ensure that construction workers, the public, future occupants and the environment are adequately protected from hazards associated with contamination, in accordance with applicable regulations.
- 5.10.5-P24 - Protect city residents from risks inherent in the transport, distribution, use and storage of hazardous materials.
- 5.10.5-P25 - Use Best Management Practices to control the transport of hazardous substances and to identify appropriate haul routes to minimize community exposure to potential hazards.
- 5.10.5-P26 - Survey pre-1980 buildings and abate any lead-based paint and asbestos prior to structural renovation and demolition, in compliance with all applicable regulations.
- 5.10.5-P33 - Limit the height of structures in accordance with the Federal Aviation Administration Federal Aviation Regulations, FAR Part 77 criteria.

4.9.2 Environmental Impacts

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction

Less Than Significant Impact with Mitigation Incorporated. During the construction and demolition phases of the project, the only hazardous materials used would be paints, cleaners, solvents, gasoline, motor oil, welding gases, and lubricants. When not in use, any hazardous material would be stored in designated construction staging areas in compliance with local, state, and federal requirements. Any impacts resulting from spills or other accidental releases of these materials would be limited to the site and easily cleaned up due to the small quantities involved and their infrequent use, hence reduced chances of worker exposure or environmental contamination.

Due to the age of the building on the project site there is a potential that asbestos containing materials (ACM) or lead-based paint (LBP) could be present and released by demolition activities. Permits for demolition would be required from the Bay Area Air Quality Management District (BAAQMD) that require an asbestos survey prior to commencement of demolition activities. Any ACM discovered would be removed and remediated in accordance with applicable BAAQMD regulations and any other applicable local and state regulations. Although the BAAQMD demolition permit requires ACM testing and regulates demolition of ACM contaminated structures and removal of ACM, it does not require LBP testing be conducted nor does it regulate demolition of LBP contaminated

structures. Existing regulations from Cal EPA, Cal OSHA, and CDPH regulate the handling and disposal of lead and LBP. However, there are no existing regulations that require testing for LBP in commercial buildings.

The applicant's proposed measure PD HAZ-2.1 reduces impacts related to ACMs and LBP and includes a survey and testing for ACMs and LBP, remediation of ACMs per Asbestos National Emissions Standards for Hazardous Air Pollutants guidelines and remediation of LBP and ACM per Cal OSHA regulations, and requirements for a registered asbestos abatement contractor to remove and dispose of any identified ACMs.

Staff reviewed PD HAZ-2.1 and found that it relies on existing regulations to reduce the potential for ACM and LBP exposure/contamination, except for requiring LBP surveys and sampling. Staff finds that most of the PD HAZ-2.1 requirements for testing of ACM and removal and disposal of LBP are covered by existing regulations, with the exception of testing for LBP. ACM and LBP contaminated materials shall be handled, transported, and disposed of per applicable local, state, and federal regulations. Since the building has the potential for LBP, but testing is not required, staff recommends mitigation measure **HAZ-1** for testing of LBP contaminated materials prior to building demolition. A potentially polychlorinated biphenyl (PCB) contaminated transformer and potentially PCB contaminated elevator hydraulic fluid may be present onsite. For demolition permits the applicant must conduct an assessment to screen for PCBs, including in priority building materials which include caulk, thermal insulation, fiberglass insulation, adhesive mastics, and rubber window gaskets. PCB containing and contaminated materials would be required to be removed prior to demolition per applicable federal, state, and local regulations.

During construction, the fuel tanks for the diesel generators would have to be filled. The transportation of the diesel fuel to the site would take many fuel tanker truck trips. Diesel fuel has a long history of being routinely transported and used as a common motor fuel. It is appropriate to rely upon the extensive regulatory framework that applies to the shipment of hazardous materials on California highways and roads to ensure safe handling in general transportation (see Federal Hazardous Materials Transportation Law 49 USC § 5101 et seq., DOT regulations 49 CFR subpart H, §§ 172–700, and California Department of Motor Vehicles regulations on hazardous cargo). Thus, the transportation of diesel fuel to the project sites during construction would have a less than significant impact to the surrounding public or environment.

Therefore, the routine transport, use or disposal of hazardous materials during project demolition and construction would have a less than significant impact to the public or the environment through compliance with regulations and implementation of **HAZ-1**.

Operation

Less Than Significant Impact. Some oils and lubricants could be stored on-site for maintenance of mechanical equipment in the equipment yards. Minor amounts of

hazardous materials could also be stored and used on-site for operation and maintenance of the data center and associated facilities. Diesel fuel would be used during emergency operation of the generators, and routine maintenance and testing. Air quality regulations limit each engine to no more than 50 hours of operation annually for reliability purposes (i.e., testing and maintenance). Maintenance and readiness testing usually occurs at loads ranging from 10 to 100 percent load.

Projects with diesel-fired back up generators would use standard practice for fuel quality and maintenance of stored diesel fuel. Standard practice includes that each engine would have a fuel filtration system that would filter the fuel contents daily. The fuel filtration system would be inspected quarterly, and a fuel sample would be collected for testing. The fuel filters would be replaced as needed or annually which would reduce any effects of fuel degradation on engine components and operation. Commercial diesel fuels also contain biocides that prevent microbial growth and additives that help to stabilize the fuel for several months.

Although diesel fuel would be stored on-site, it would be stored in fuel tanks integrated into the stacked generators. Each stacked pair of diesel-fired backup generators would have a storage capacity of 12,500 gallons of diesel fuel and 400 gallons of diesel exhaust fluid (DEF). DEF is a non-hazardous solution of 67.5 percent water and 32.5 percent automotive grade urea. The estimated shelf life of the DEF based on ambient temperatures for Santa Clara County is approximately 12-18 months. The generator's integrated fuel tanks would be of a double-walled high integrity design. The interstitial space between the inner and outer walls of each tank would be continuously monitored electronically for the presence of leaks through the inner wall. The monitoring system would be electronically linked to an alarm system in the security office that would alert personnel if a leak were detected in any of the inner tanks. The above design features would ensure that the diesel fuel generators meet the secondary containment requirements of the California Health and Safety Code for the above ground petroleum storage tank program.

Diesel fuel would be scheduled and delivered on an as-needed basis in a compartmentalized tanker truck with maximum capacity of 8,500 gallons. Diesel fuel transport would comply with all appropriate regulations regarding transport of hazardous materials on California roads and highways. The tanker truck would park on the access road to the south of the generator yard and extend the fuel fill hose through one of multiple hinged openings in the precast screen wall surrounding the generator equipment yard. A spill catch basin would be located at each fill port for the generators. The DEF tank located within the enclosure of the lower generator in each stacked pair could be filled in place from drums, totes, or a bulk tanker truck at the tank top.

The emergency backup generator units would be housed within a self-sheltering enclosure that prevents the intrusion of stormwater. Additionally, to prevent a release from entering the storm drain system, storm drains would be temporarily blocked off during fueling events. Rubber pads or similar devices would 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 would be scheduled at times when storm events are improbable (GI Partners 2022e).

Hazardous materials storage at the project site would be regulated under local, state and federal regulations. For example, the project would be subject to the APSA due to the volume of fuel that would be stored in aboveground tanks. Tank facilities under the APSA must comply with all requirements and prepare and implement a SPCC plan, which the applicant has committed to preparing. The spill prevention measures described above would be incorporated into the plan. Additionally, a HMBP would be required and completed for the safe storage and use of chemicals and would incorporate all relevant regulations. Transport of diesel fuel will comply with regulations that apply to the shipment of hazardous materials on California highways and roads to ensure safe handling in general transportation. Conformance with relevant laws and regulations would minimize the likelihood of hazardous material releases from the project. The project would not create a hazard to the public and thus impacts would be less than significant.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction

Less Than Significant Impact. As described under the discussion for impact criterion "a", project demolition and construction would require the limited use of hazardous materials, such as fuels, lubricants, and solvents. The storage and use of hazardous materials during construction could result in the accidental release of small quantities of hazardous materials typically associated with minor spills or leaks. However, as discussed in impact criterion "a", hazardous materials would be stored, handled, and used in accordance with applicable regulations. Personnel would be required to follow instructions on health and safety precautions and procedures to follow in the event of a release of hazardous materials. All equipment and materials storage would be routinely inspected for leaks. Records would be maintained for documenting compliance with the storage and handling of hazardous materials. For the above reasons, the project impacts would be less than significant.

Operation

Less Than Significant Impact. The project would not create a significant hazard to the public or environment due to an accidental release of a hazardous material. As described above in criterion "a" the project would include the use and storage of diesel fuel for the operation, and testing and maintenance of the backup generators. Additionally, minor amounts of hazardous materials would be stored and used for maintenance of on-site equipment. All hazardous materials would be used and stored in accordance with federal,

State, and local regulations. A HMBP and a SPCC plan would be completed for the safe storage and use of chemicals. The SPCC would include the listed spill prevention measures outlined in criterion "a". Conformance with relevant laws and regulations would minimize the likelihood of hazardous material releases from the project.

With the above listed safety features and precautions, the project impacts would be less than significant.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Construction

Less Than Significant Impact. Although there are no schools located or proposed within 0.25 mile of the project site, the closest school to the project site, Bracher Elementary School, is located just outside of this distance at 0.26 miles south of the project. No acutely hazardous materials would be used during project demolition or construction activities, and there are no hazardous materials that would be emitted from the site at rates capable of creating offsite impacts. Although hazardous materials may be used or encountered during construction activities, potential exposure would be limited to the project site or along the recycled water line alignment. Therefore, there would be a less than significant impact.

Operation

No Impact. There are no schools located or proposed within 0.25 mile of the project site. Additionally, the project would not handle acutely hazardous materials or hazardous waste during project operation. Therefore, no impact from routine maintenance or operation would occur.

d. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Construction

Less Than Significant with Mitigation Incorporated. According to a review of the DTSC Envirostor and SWRCB GeoTracker databases (DTSC 2023, SWRCB 2023), the project site does not have any known, open cases on the hazardous materials sites compiled pursuant to Government Code section 65962.5. AEI's Phase I ESA for the project site identified previous soil and groundwater contamination at the project site due to the former XES Incorporated activities at the site. According to the SWRCB GeoTracker website, the site is listed as a Case Closed Site Cleanup Site that had both soil and groundwater impacts due to 1,1,1-trichloroethane, freon, vinyl chloride, dichloroethane

and dichloroethene (GI Partners 2022e). There is limited information regarding limits of contamination and remediation of the site. Therefore, despite the Case Closed status there still exists a potential to encounter remnant or unidentified contaminated soil or groundwater during project excavation.

Demolition activities for the project would include ground disturbing activities for removal of below ground structures such as utilities and building structure foundations. Ground disturbing activities associated with construction would include site grading, construction of concrete foundations and structural steel framing, fencing, installation of underground utilities, including conduit and electrical cabling to interconnect the generators to the buildings, and placement and securing of the generators. Although the site is currently listed with a Case Closed status, it is not under the supervision of an environmental agency and, ground disturbing activities could have the potential to encounter unidentified or remnant contaminated soil or groundwater that would require specialized handling and disposal. Sites with known contamination are required per Cal OSHA regulations to notify, educate, and give instructions regarding the hazards. However, Cal OSHA regulations do not require the above actions for potentially contaminated sites, nor does it specify how this information should be transmitted to workers.

Staff reviewed the applicant's proposed measures (PD HAZ -1.1 through 1.4) for reducing potential impacts associated with contaminated soil. Applicant's PD HAZ-1.1 to PD HAZ-1.3 requires shallow soil sampling for contaminants, preparation of a Site Management Plan (SMP) and Health and Safety Plan (HSP), and remediation of soils in consultation with oversight agencies if concentrations are found above risk-based thresholds. The applicant's PD HAZ-1.4 requires that construction dewatering be in compliance with the NPDES permit requirements for wastewater discharge permit conditions, which requires testing of the water prior to discharge. Staff finds that PD HAZ-1.1 is insufficient as it only requires sampling of shallow soils. PD HAZ-1.2 is insufficient in that it does not specify enough detail about what information should be included in the SMP and HSP to meet industry standards. PD HAZ-1.3 is lacking in detail as it does not require notification of local agencies as well as the appropriate regulatory oversight agency. Additionally, staff finds that PD HAZ-1.4, which requires compliance with the NPDES and/or City of Santa Clara discharge permits and subsequent required testing, is solely reliant on existing regulation for groundwater discharges and is not needed as mitigation as all groundwater discharges would comply with required permits.

Therefore, staff recommends mitigation measures **HAZ-2** and **HAZ-3.** Mitigation measure **HAZ-2** specifies preparation of a SMP and HSP and identifies the minimum information to be included in each plan. The information to be included in the HSP would include protocols for testing any remnant or unknown soil and/or groundwater contamination via sampling and testing prior to issuance of demolition permits and would identify procedures to follow if unknown or remnant contamination is encountered during project activities. If contamination is identified through the sampling and testing, the appropriate local, state, and federal regulations would be followed, and local and state agencies would be coordinated with regarding handling and disposal of the contaminated

soil or groundwater. **HAZ-3** specifies testing of soil and groundwater per the plan and protocols developed in the SMP to fully identify potential soil or groundwater contamination at the project site.

With implementation of **HAZ-2** and **HAZ-3** and compliance with the applicable local, state, and federal regulations, the project would have a less than significant impact to people or the environment from hazardous materials at an environmentally contaminated site.

Operation

No Impact. Operation and maintenance activities would not involve excavation activities and would therefore have no impact.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Construction

Less Than Significant Impact. The northern end of the San Jose Mineta International runways are located approximately 1.8 miles east of the proposed project site. The project site is not within an identified safety zone as defined in the airport's Comprehensive Land Use Plan. Additionally, the project would be located outside of the 65 dB Aircraft Noise Contour and would not be exposed to excessive aviation noise. Title 14, Part 77.9 of the CFR requires FAA notification for construction or alterations within 20,000 feet of an airport with a runway more than 3,200 feet in length if the height of the construction or alteration exceeds a slope of 100 to 1 extending outward and upward from the nearest point of the nearest runway of the airport (CFR 2020). The threshold for the FAA notification 100 to 1 surface exceedance height is approximately 95 feet at the project site and if the height of any temporary construction equipment (such as cranes used during construction) exceeds the 100 to 1 surface, the project applicant must submit a copy of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA (CEC 2023a). Compliance with this federal requirement, and with FAA determinations, would reduce any potential aviation hazard impacts to less than significant. Therefore, the project would result in less than significant impacts as related to aviation safety hazard or excessive aviation noise for people residing or working in the project area. Project construction would not result in excessive noise impacts for people residing or working in the project area, as described in a more detailed analysis in **Section 4.13 Noise**.

Operation

Less Than Significant Impact. Operation and maintenance activities for the project site would be similar to those for a similarly sized industrial building and would not have an impact on people working or residing in the area. The project site is within a FAR Part 77

Surface zone for the airport with a maximum structure height of 212 feet above mean sea level. However, the proposed project structures would be of similar height to existing area buildings. As noted above, the threshold for the FAA notification 100 to 1 surface exceedance height is approximately 95 feet at the project site. The mechanical equipment screen on the roof top of the data center building would extend to a height 103 feet. Therefore, the project applicant must file FAA Form 7460-1 Notice of Proposed Construction or Alteration to comply with federal FAA requirements (CEC 2023a). Compliance with this federal requirement and with FAA determinations would reduce any potential impacts related to aviation hazards to less than significant. In addition, the thermal plume generated by the project would not be large enough to pose a safety hazard to any aircraft near the Airport. Detailed analysis of potential thermal plume impacts is contained in **Section 4.17 Transportation**. Therefore, there would be a less than significant impact.

f. Would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

Construction

No Impact. A review of the Santa Clara County Operational Area Hazard Mitigation Plan for the project revealed no specific mapping or delineation of emergency evacuation or access routes. The plans identified that the area police, fire department, and other emergency services would implement their emergency response or evacuation plans according to their communications protocols and hazard mitigation programs. The project site is not identified on any emergency evacuation or access routes. In addition, the construction would not require any road closures since the work would all be done onsite. During project construction, there would be no impact to an adopted response plan or emergency evacuation plan.

Operation

No Impact. After construction, no lane closures would be needed, and no impact to a response plan or emergency evacuation plan would occur.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Construction

No Impact. The project site is located in the city of Santa Clara in Santa Clara County. It is not located within an FRA or SRA, nor is it mapped within a LRA VHFSZ. The project site is in a fully urbanized area and is not adjacent to wildlands. Industrial and commercial buildings bound the project to the west, east, and north and primarily medium and high-density residential buildings are located south of the project site across the rail line.

Although equipment and vehicles used during construction, as well as welding activities, have the potential to ignite dry vegetation, the project is located within an urban area surrounded by industrial and commercial zones that have irrigated landscaping and very limited dry vegetation. In the event of construction triggered fire at the project site, it would be served by the Santa Clara Fire Department. The closest fire station is Fire Station #9 located at 3011 Corvin Drive in Santa Clara. Therefore, there would be no impact from wildland fires resulting from construction activities related to the project.

Operation

No Impact. The project site is located within a LRA that is not located within or near any wildlands. The project site would be served by the Santa Clara Fire Department in the event of project related or other local fires. The closest fire station is Fire Station #9 located at 3011 Corvin Drive in Santa Clara. As discussed for construction, there would be no impact from wildland fires.

4.9.3 Mitigation Measures

HAZ-1: Prior to issuance of demolition permits, a lead-based paint (LBP) visual inspection and pre-demolition survey, including sampling and testing of suspect materials, shall be conducted of on-site buildings to determine the presence of LBP. The survey shall be conducted by a contractor with California Department of Public Health (CDPH) Lead Related Construction (LRC) certified personnel as required by CDPH regulations. The findings of the LBP survey shall be submitted to the Santa Clara City Fire Department Hazardous Materials Division for review.

HAZ-2: Prior to issuance of demolition or grading permits, the project applicant shall prepare a Site Management Plan (SMP) to guide activities during demolition, excavation, and initial construction to ensure that potentially contaminated soils are identified, characterized, removed, and disposed of properly. The purpose of the SMP is to establish appropriate management practices for handling impacted soil or other materials that may be encountered during construction activities. The SMP shall be reviewed and approved by the Santa Clara County Environmental Services Department and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division prior to any work on the site, including prior to soil and groundwater sampling.

The SMP shall be implemented during project demolition and construction and shall include, but shall not be limited to, the following components:

- A detailed discussion of the site background.
- Prior to any onsite work, Health and Safety Plans (HSPs) for the Project shall be prepared by all contractors and subcontractors that will be working at the project site and incorporated in the SMP. The HSPs shall be prepared by an industrial hygienist. The HSPs shall be specific to each of the contractors' or subcontractors' scopes of work and based upon the known environmental conditions for the site prior to project construction. The HSPs shall be updated as needed if site conditions change

significantly, such as the discovery of contaminated soil or groundwater. The HSPs shall be approved by the Director or Director's designee with the Santa Clara County Environmental Services Department and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division, and implemented under the direction of a Site Safety and Health Officer. Copies of the approved HSPs shall be kept at the project site.

- Description of soil and groundwater testing, which shall include (but not be limited to) the collection of soil samples and groundwater samples and analyses for volatile organic compounds (VOCs) and any other contaminants identified in previous environmental studies in the soil and groundwater and lead and organochlorine pesticides in the soil to verify presence of absence of remnant or unknown soil or groundwater contamination. This soil and groundwater characterization shall be performed prior to initiation of project construction.
- Protocols for sampling at the site to verify or rule out a vapor encroachment conditions at the site and within the buildings to be demolished and, if verified, for remediation of vapor encroachment conditions within the existing building prior to demolition and to prevent it in the proposed structures.
- Protocols for sampling of soil and groundwater to facilitate the profiling of the soil and groundwater for appropriate off-site disposal or reuse, and for construction worker safety, dust mitigation during demolition and construction and potential exposure of contaminated soil or groundwater to future users of the site prior to project construction.
- Procedures to be undertaken in the event that contamination is identified above action levels or previously unknown contamination is discovered prior to or during project demolition or construction;
- Notification procedures if previously undiscovered significantly impacted soil or groundwater, or free fuel product is encountered during demolition or construction;
- Sampling and laboratory analyses of excess soil requiring disposal at an appropriate off-site waste disposal facility;
- Procedures and protocols for the safe storage, stockpiling, and disposal of contaminated soils; and
- Protocols to manage groundwater, including segregation or treatment of contaminated groundwater, if necessary, that may be encountered during trenching or subsurface excavation activities.

If there are no contaminants identified on the project site that exceed applicable screening levels for construction workers and residential users published by the Regional Water Quality Control Board (RWQCB), California Department of Toxic Substances Control (DTSC), or California Environmental Protection Agency, the SMP does not need to be submitted to an oversight agency and instead only needs to be submitted to the Santa Clara County Environmental Health Department and the Santa Clara Fire Department Fire

Prevention and Hazardous Materials Division for approval prior to issuance of a grading permit and prior to conducting any demolition activities.

If contaminants are identified at concentrations exceeding applicable screening levels, the project applicant shall obtain regulatory oversight from Santa Clara County Department of Environmental Health or the DTSC under a Site Cleanup Program. The SMP and planned remedial measures shall be reviewed and approved by the Santa Clara County Department of Environmental Health Hazardous Materials Compliance Division or DTSC. A copy of the SMP shall be submitted to the Director or Director's designee with the Santa Clara County Environmental Services Department and, the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division. Copies of the approved SMP shall be kept at the project site.

Any contaminated soils identified by testing conducted in compliance with the SMP and found in concentrations above established thresholds shall either be removed and disposed of according to California Hazardous Waste Regulations or the contaminated portions of the site shall be capped beneath the planned development under the regulatory oversight of the Santa Clara County Hazardous Materials Compliance Division or the DTSC. Contaminated soil excavated from the site shall be hauled off-site and disposed of at a licensed hazardous materials disposal site.

HAZ-3: Prior to the issuance of grading permits, soil and/or groundwater samples shall be taken in areas where disturbance is anticipated to determine if contaminated soils or groundwater with concentrations above established construction/trench worker thresholds may be present due to historical agricultural use and from historical leaks and spills. Sampling shall be conducted per the protocols outlined in the approved project SMP. Once the soil sampling analysis is complete, a report of the findings shall be submitted to the appropriate agencies per the requirements of the SMP.

4.9.4 References

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DTSC 2023 – Department of Toxic Substances Control (DTSC). Envirostor Database. Accessed February 2023. Available online at: http://www.envirostor.dtsc.ca.gov/public/

GI Partners 2022a – GI Partners. (TN 245765). Bowers Backup Generating Facility Application for SPPE, Appendices B-E, Part 1, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

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GI Partners 2022e – GI Partners. (TN 245769). Bowers Backup Generating Facility Application for SPPE Main, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

OSFM 2022 – California Office of the State Fire Marshal (OSFM). Santa Clara County, State Responsibility Area Fire Hazard Severity Zones, dated November 21, 2022. Available online at: https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildfire-preparedness/fire-hazard-severity-zones/fire-hazard-severity-zones-map/

Santa Clara County 2017 – County of Santa Clara Emergency Management (Santa Clara County). October 15, 2017. *Santa Clara County Operational Area Hazard Mitigation Plan Volumes 1&2.* Available online at: https://emergencymanagement.sccgov.org/multi-jurisdictional-hazard-mitigation-plan-mjhmp

SCCALUC 2016 – Santa Clara County Airport Land Use Commission (SCCALUC). 2016. San Jose Norman Y. Mineta International Airport Comprehensive Land Use Plan for Santa Clara County. Accessed February 2023. Available online at: https://stgenpln.blob.core.windows.net/document/ALUC_SJC_CLUP.pdf

SWRCB 2023 – State Water Resources Control Board (SWRCB). GeoTracker Database. Accessed February 2023. Available online at: http://geotracker.waterboards.ca.gov

4.10 Hydrology and Water Quality

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the project with respect to hydrology and water quality.

HYDROLOGY AND WATER QUALITY Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:				
i. result in substantial erosion or siltation, on- or offsite;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G

4.10.1 Environmental Setting

Storm Drainage and Water Quality

The project would be constructed in the city of Santa Clara, within the San Tomas Aquino Creek watershed. The San Tomas Aquino Creek watershed drains to the San Francisco Bay, located approximately 6.5 miles northwest of the proposed project site. The site is located approximately 2,000 feet west of San Tomas Aquino Creek. Stormwater from the project site drains into the City of Santa Clara's stormwater drain

system along Bowers Avenue, which discharges to San Tomas Aquino Creek and ultimately to San Francisco Bay.

The water quality of San Tomas Aquino Creek and other creeks in the area is influenced by pollutants contained in stormwater runoff. Stormwater runoff from urban areas typically contains pollutants such as sediment, metals, pesticides, herbicides, oil, grease, asbestos, lead, and animal wastes.

Since the approximately 5.12-acre site is currently developed with a two-story 55,000-square-foot office building and associated paved parking and loading dock areas; the site is generally impervious. The proposed project would consist of a four-story data center building with 244,068 square feet of floor space, a utility substation, a generator equipment yard, a parking lot, landscaping, and utility pipeline connections.

Groundwater

The Santa Clara Valley groundwater basin is divided into four interconnected subbasins that border the southern San Francisco Bay. The proposed project would be located in the Santa Clara Subbasin, which extends across the Santa Clara Valley in the region south of San Francisco Bay. According to Figure 6-3 of the 2020 Santa Clara Urban Water Management Plan (UWMP), the project site does not lie within a recharge zone (Santa Clara 2021).

Fluctuations in rainfall, changing drainage patterns, and other hydrologic factors can influence groundwater levels. According to the Historical Groundwater Elevation Data website hosted by the Santa Clara Valley Water District (SCVWD), the shallowest depth to groundwater in the vicinity of the project site observed up until 2003 is between 5 to 10 feet below ground surface (bgs) (SCVWD 2022).

Since 1975, the project site and surrounding area have historically been used for industrial purposes. This site has been identified on the Geotracker website as the XES Incorporated (Xerox) facility in which various volatile organic compounds (VOCs) were released (SWRCB 2022). Based on additional information provided from the Phase I Site Assessment included as Appendix E of the SPPE application (GI Partners 2022b), soil sampling and groundwater monitoring conducted between 1993 and 1995 indicated VOCs were detected in groundwater, but not the soil indicating an off-site source. The San Francisco Bay Regional Water Quality Control Board (RWQCB) subsequently closed the case in 1997.

Flooding

The average elevation of the existing project site is approximately 42-47 feet above the 1988 North American Vertical Datum (USGS 2021). According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) for the area, the project site is located within Zone X. Zone X is defined as areas that meet any of the following criteria (FEMA 2009):

i. 0.2 percent annual chance of flood (or a 500-year flood),

ii. One percent chance of annual flood (100-yer flood) with average depths of less than one foot, or with drainage areas less than one square mile,

iii. Protected by levees from a one percent annual chance of flood.

The SCVWD routinely monitors and studies the condition of each of its 10 dams. Dam inspections are conducted after significant earthquakes to satisfy the requirements of the California dam safety program. The project site is within the Lexington Dam failure inundation area under the "fair weather" scenario to a depth of 5 feet, which assumes that dam failure occurs during non-storm conditions with a normal full pool elevation in the reservoir and normal flow conditions downstream of the dam (SCVWD 2019a). The project site is not within the Anderson Dam failure inundation area (SCVWD 2019b).

According to the National Oceanic and Atmospheric Administration's (NOAA) Digital Coast, Sea Level Rise Viewer (NOAA 2022), the project site is not within an area mapped as low-lying with respect to sea level rise and is outside the area to be affected by a projected 3-meter (9.8-foot) rise in sea level.

In addition, the project site is not located near a large body of water, the ocean, or steep slopes, and is located outside of a tsunami hazard zone (CGS 2021).

Regulatory Background

Federal

Clean Water Act and California's Porter-Cologne Water Quality Control Act. The State Water Resources Control Board (SWRCB) and its nine RWQCBs are responsible for the regulation and enforcement of the water quality protection requirements of the federal Clean Water Act (CWA) and the state's Porter-Cologne Water Quality Control Act (Porter-Cologne). The National Pollutant Discharge Elimination System (NPDES) is the permitting program that allows point source dischargers to comply with the CWA and Porter-Cologne laws. This regulatory framework protects the beneficial uses of the state's surface and groundwater resources for public benefit and environmental protection. Protection of water quality could be achieved by ensuring the proposed project complies with applicable NPDES permits from the SWRCB or the San Francisco Bay RWQCB.

Under Section 303(d) of the CWA, states are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern. The TMDL is the quantity of a pollutant that can be assimilated by a water body without violating water quality standards. The project site is listed by the United States Environmental Protection Agency (EPA) as within the Saratoga Creek watershed (which includes San Tomas Aquino Creek) included on Section 303(d) List of Impaired Waters for California and is affected by pesticides and trash (EPA 2022). Listing a water body as impaired does not necessarily suggest that the water body cannot support beneficial uses; rather, the intent is to identify the water body as requiring future development of TMDLs to maintain water quality and reduce the potential for future water quality degradation.

The San Francisco Bay RWQCB issued a Municipal Regional Stormwater NPDES Permit (Permit Number CAS612008) that requires the City of Santa Clara to implement a stormwater quality protection program. This regional permit applies to 77 Bay Area municipalities, including the City of Santa Clara. Under the provisions of the Municipal NPDES permit, redevelopment projects that disturb more than 10,000 square feet are required to design and construct stormwater treatment controls to treat post-construction stormwater runoff. The permit requires the post-construction runoff from qualifying projects to be treated by using Low Impact Development (LID) treatment controls, such as biotreatment facilities.

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) assists co-permittees, such as the city of Santa Clara, in the implementation of the provisions of the Municipal NPDES permit. In addition to water quality controls, the Municipal NPDES permit requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation, or other impacts to beneficial uses of local rivers, streams, and creeks. Projects may be deemed exempt from the permit requirements under one of the following three conditions (SCVURPPP 2005):

1. the project will not increase the potential for erosion or other non-beneficial impacts,
2. the project drains into a hardened channel or tidally influenced area, and
3. the project is within a watershed that is over 90% developed or with greater than 65 percent impervious surface.

The project site is located in a catchment area with imperviousness greater than 65 percent; thus, the project site is not subject to the SCVURPPP hydromodification requirements.

Federal Emergency Management Agency Flood Insurance Program.

The nationwide standard used to gauge flood magnitude for floodplain management has a one percent probability of occurring in any given year. This type of flood is also known as the 100-year flood, or base flood. The FIRM is the official map created and distributed by FEMA for the National Flood Insurance Program that shows areas subject to inundation by the base flood for participating communities. FIRMs contain flood risk information based on historic, meteorologic, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development.

State

State Sustainable Groundwater Management Act. The 2014 Sustainable Groundwater Management Act requires local public agencies and Groundwater Sustainability Agencies (GSAs) in high and medium-priority basins to develop and implement Groundwater Sustainability Plans (GSPs) or alternatives to GSPs. GSPs include detailed road maps for how groundwater basins will attain long term sustainability. The

SCVWD is the exclusive GSA for the Santa Clara Valley groundwater subbasin, which contains the proposed project site. SCVWD developed a groundwater management plan for the Santa Clara and Llagas subbasins that is intended to be functionally equivalent to a GSP.

Local

City of Santa Clara Code, Flood Damage Prevention Code. Included in Chapter 15.45 of the Santa Clara City Code is a requirement that the lowest floor of all new or substantially improved structures be constructed at least as high as the base flood elevation.

4.10.2 Environmental Impacts

Environmental impacts evaluated in this section include the construction, operation, and maintenance elements of the proposed project.

a. Would the project violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact with Mitigation Incorporated. The proposed project would disturb about 5.12 acres of land and be subject to construction-related stormwater permit requirements of California's NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) administered by the SWRCB. Prior to any ground-disturbing construction activity, the applicant must comply with the Construction General Permit, which includes the preparation of a Stormwater Pollution Prevention Plan (SWPPP).

With the implementation of the construction SWPPP, redevelopment of the site would not substantially degrade the quality, or increase the volume, of stormwater runoff during construction. In addition, the Municipal NPDES permit, as well as the SCVURPPP, requires that redevelopment not result in a substantial net increase in stormwater flow exiting the project site during operation. As a result, stormwater runoff from the project site would not be expected to exceed the capacity of the local drainage system or significantly contribute to water quality degradation.

The proposed project is estimated to remove 16,000 cubic yards of soil up to a depth of 16 feet bgs during construction, possibly encountering groundwater and making dewatering necessary. If dewatering is necessary, and the discharge is found to be contaminated, the project owner would be required to obtain coverage under the VOC and Fuel General Permit (San Francisco Bay RWQCB General Order No. R2-2017-0048 NPDES Permit No. CAG912002). Discharge of uncontaminated water from the dewatering operation to waters of the United States within the San Francisco Bay RWQCB's jurisdiction is a permitted activity under the Construction General Permit. This is further

addressed by a mitigation measure proposed by the applicant and analyzed further in **Section 4.9 Hazards and Hazardous Materials**.

The applicant proposed a mitigation measure to reduce potential impacts to water quality (PD HYD-1.1). The applicant's measure proposes best management practices that would typically be included in the SWPPP; therefore, the project would not be expected to violate water quality standards or waste discharge requirements during construction and operation, and impacts would be less than significant.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The project as proposed would rely on City of Santa Clara (City) municipal water and does not propose to install any groundwater extraction wells. The City's 2020 UWMP indicates the project site is located within an area serviced by both imported surface water from the San Francisco Public Utilities Commission (SFPUC) and groundwater. The UWMP further indicates that the City has sufficient supply to meet the project's demand of 2 acre-feet per year (AFY) of potable water in normal and single dry-year scenarios (Santa Clara 2021). However, the UWMP shows that the City would have a deficit in a multiple dry-year scenario that assumes supply from SFPUC would be interrupted. Under this scenario, the City's supply from SFPUC might be interrupted if certain conditions are met as specified in the interruptible contract between the City and SFPUC (Santa Clara 2021). If supply from SFPUC is interrupted, the City would replace the demand using groundwater or water supplied by SCVWD.

According to the UWMP, the groundwater basin has been managed successfully to prevent overdraft conditions. In case of a water supply shortage, the City has adopted water conservation policies to reduce demand such that available supplies are sufficient to meet demand. In addition, the project site is not located within a recharge area (Santa Clara 2021).

The project's impact on groundwater supplies or recharge during construction and operation would therefore be less than significant.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:

i. Result in substantial erosion or siltation on- or off-site;

Less Than Significant Impact. The existing site is nearly completely covered with impervious surfaces and includes stormwater collection and disposal facilities throughout the parcel. The proposed project would include a new stormwater collection system that

would incorporate source control and treatment best management practices (BMPs). These BMPs would reduce the overall runoff into the City's collection system, also reducing erosion and sedimentation impacts. This post-construction design would therefore not be expected to result in increased runoff (rate or volume) from the site. The stormwater design is expected to comply with the BMPs, by implementing measures to ensure the project would not result in a substantial net increase in stormwater flow exiting the project site or alter local runoff drainage patterns during project construction. Therefore, impacts would be less than significant.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Less Than Significant Impact. Surface runoff would be controlled as described in section (c)(i) above. Therefore, impacts would be less than significant.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Less Than Significant Impact. The proposed project would include a new stormwater collection system that includes drainage swales to reduce the overall runoff into the City's collection system. The discharge of polluted runoff would be expected to be similarly reduced. Therefore, impacts would be less than significant.

iv. Impede or redirect flood flows?

Less Than Significant Impact. Though the site is located near San Tomas Aquino Creek, these waterways do not pose a likely flood risk. According to the FEMA Flood Insurance Rate Map for the area, the project site is located within Zone X. As described above, Zone X is expected to be protected from the 100-year flood. The project site is not within an area mapped as vulnerable to sea level rise in the NOAA's Digital Coast, Sea Level Rise Viewer (NOAA 2022). The project would have structures similar to those at the existing site and would not add significantly to the existing potential of the site to impede flood flows. Therefore, no net change in obstruction is expected from the project and the impacts would be less than significant.

d. Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. The project site is located within FEMA flood Zone X and not subject to inundation by the 100-year flood. The project is therefore not expected to be a source of pollution from flooding.

The project site is not within an area mapped as vulnerable to sea level rise in the NOAA's Digital Coast, Sea Level Rise Viewer (NOAA 2022). In addition, the project site is not located near a large body of water, the ocean, or steep slopes, and is located outside of a tsunami hazard zone (CGS 2021).

The project site is within the inundation zones of one upstream reservoir. Lexington Reservoir and James J. Lenihan Dam are located on Los Gatos Creek approximately 15 miles upstream. The Lenihan Dam Flood Inundation Map shows that dam failure would result in flooding at the project site. In the unlikely event of a flood, the release of on-site pollutants would be prevented by the measures included in the SWPPP.

Therefore, the likelihood of inundation of the site due to flooding, dam failure, or tsunami/seiche events is remote, and the overall risk of pollutants being released is less than significant.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the local water quality control plan. The project would comply with the Basin Plan by implementing the requirements of the Construction General Permit, as described in section (a) above, and through the preparation of a construction SWPPP. The project would not be expected to obstruct the implementation of the local water quality control plan and this impact would be less than significant.

SCVWD developed a groundwater management plan for the Santa Clara and Llagas Subbasins that is intended to be functionally equivalent to a GSP. The information contained in the SCVWD groundwater management plan is used to inform the City of Santa Clara's UWMP about groundwater supplies. Therefore, it is reasonable to rely on the UWMP to evaluate how a proposed project would impact the implementation of the sustainable groundwater management plan. The City's UWMP for 2020 shows that it has sufficient supply to meet the project's demand of 2 AFY of potable water in normal and single dry-year scenarios. However, the UWMP also shows that the City would have a deficit in a multiple dry-year scenario that assumes that supply from SFPUC would be interrupted. Under this scenario, the City's supply from SFPUC might be interrupted if certain conditions are met, as specified in the interruptible contract between the City and SFPUC (Santa Clara 2021). If supply from SFPUC is interrupted the City would have to replace the demand using groundwater or supply water from SCVWD.

According to the UWMP, the groundwater basin has been managed successfully to prevent overdraft conditions. In case of a water supply shortage, the City has adopted water conservation policies to reduce demand such that available supplies are sufficient to meet demand (Santa Clara 2021). The project would therefore not be expected to impede the implementation of the SCVWD's groundwater management plan. This impact would be less than significant.

4.10.3 Mitigation Measures

None required.

4.10.4 References

CGS 2021 – California Geological Survey (CGS). Tsunami Hazard Area Map, County of Santa Clara. July 8, 2021. Accessed on September 7, 2022. Available online at: https://www.conservation.ca.gov/cgs/Documents/SHP/Tsunami/HazardArea/Maps/Tsunami_Hazard_Area_Map_Santa_Clara_County_a11y.pdf

EPA 2022 – United States Environmental Protection Agency (EPA). How's My Waterway? EPA website. Accessed on September 21, 2022. Available online at: https://mywaterway.epa.gov/state/CA/water-quality-overview

FEMA 2009 – Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map, Santa Clara County, California and Incorporated Areas, Panel 226 of 830, Map No. 06085C0226H. Effective May 18, 2009. Accessed on September 7, 2022. Available online at: https://msc.fema.gov/portal/search?AddressQuery=2400%20Ringwood%20Avenue%2C%20San%20Jose%2C%20CA#searchresultsanchor

GI Partners 2022b – GI Partners. (TN 245766). Bowers Backup Generating Facility Application for SPPE Appendix E, Part 2, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

NOAA 2022 – National Oceanic and Atmospheric Administration (NOAA). Digital Coast, Sea Level Rise Viewer. Accessed on September 21, 2022. Available online at: https://coast.noaa.gov/slr/#/layer/slr/10/-13581756.874679431/4498150.719796521/13/satellite/none/0.8/2050/interHigh/midAccretion.

Santa Clara 2021 – City of Santa Clara Water and Sewer Utilities (Santa Clara). 2020 Urban Water Management Plan. Prepared by the city of Santa Clara Water and Sewer Utilities. Adopted June 22, 2021. Accessed: September 8, 2022. Available online at: https://www.santaclaraca.gov/home/showpublisheddocument/74073/637606452907100000

SCVURPPP 2005 – Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). Hydromodification Management Plan. Prepared by the SCVURPPP Management Committee. April 21, 2005. Accessed on September 21, 2022. Available online at: https://scvurppp.org/wp-content/uploads/2021/08/hmp_complete_032905.pdf

SCVWD 2019a – Santa Clara Valley Water District (SCVWD). Inundation Map for the Hypothetical Fair Weather Failure of Lenihan Dam, Federal Dam ID: CA00294, State Dam ID: 72-008. Sheet 13 of 19. November 2019. Accessed on September 21, 2022. Available online at: https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2

SCVWD 2019b – Santa Clara Valley Water District (SCVWD). Inundation Map for the Hypothetical Fair Weather Failure of Leroy Anderson Dam, Federal Dam ID: CA00294, State Dam ID: 72-009. 69 Sheets. November 2019. Accessed on September 21, 2022. Available online at: https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2

SCVWD 2022 – Santa Clara Valley Water District (SCVWD). Historical Groundwater Elevation Data website. Accessed on September 7, 2022. Available online at: https://gis.valleywater.org/GroundwaterElevations/

SWRCB 2022 – State Water Resources Control Board (SWRCB). GeoTracker website. Accessed on September 7, 2022. Available online at: https://geotracker.waterboards.ca.gov/

USGS 2021 – United States Geological Survey (USGS). San Jose West Quadrangle, 7.5-minute series, Published 2021. Accessed on September 7, 2022. Available online at: https://viewer.nationalmap.gov

4.11 Land Use and Planning

This section describes the environmental setting, regulatory background, and impacts associated with construction and operation of the project with respect to land use and planning.

LAND USE PLANNING Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

4.11.1 Environmental Setting

The approximately 5.12-acre project site is located in the city of Santa Clara at 2805 Bowers Avenue. There is a two-story 55,000 square-foot office building on the project site that would be demolished as part of the project (GI Partners 2022e). Residences and a park are more than 500 feet south of the project site across from the Union Pacific Caltrain railroad tracks. The project site is surrounded by commercial and industrial uses to the north, west, and east. The San José Mineta International Airport (formerly Norman Y. Mineta San Jose International Airport) is located approximately 1.8 miles east of the project site.

Regulatory Background

Federal

No federal regulations relating to land use and planning apply to the project.

State

No state regulations relating to land use and planning apply to the project.

Local

City of Santa Clara General Plan. The City of Santa Clara 2010-2035 General Plan (General Plan) shows that the project site is within an area designated as High Intensity Office/Research and Development (R&D) during all three phases of General Plan implementation (Santa Clara 2014, Figures 5.2-1, 5.2-2, and 5.2-3). The General Plan also includes land use policies pertaining to the project, discussed later in this section.

City of Santa Clara Zoning Code. The project site is in the Light Industrial (ML) zoning district. The City of Santa Clara Zoning Code (Zoning Code) includes development standards for parcels in the Light Industrial zoning district, including minimum side, front, and rear setbacks, maximum height, and maximum lot coverage, discussed later in this section.

Comprehensive Land Use Plan, Norman Y. Mineta San Jose International Airport. The Santa Clara County Airport Land Use Commission (ALUC) adopted the Comprehensive Land Use Plan (CLUP) for the San Jose Mineta International Airport in 2011; the ALUC approved minor amendments to the CLUP in 2016. The purpose of the CLUP is to safeguard the welfare of the inhabitants in the airport vicinity and ensure that new land uses do not affect airport operations. The project site is located to the west and outside of the designated Airport Influence Area (AIA), which is the area affected by CLUP policies (Santa Clara County 2016). Because the project site is outside of the AIA, CLUP policies do not apply to the project.

4.11.2 Environmental Impacts

a. Would the project physically divide an established community?

Construction and Operation

No Impact. The project would occupy a developed site that does not serve as a link between communities. All construction, except for construction of linears, would take place on the project site. No roadways, sidewalks, or bikeways would be permanently obstructed, and therefore, the project would not prevent pedestrian, bike, or vehicular movement between different areas of the community. Operation and maintenance of the project would occur fully on site and would not physically divide the community. Therefore, no impact would occur.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Construction and Operation

Less Than Significant Impact. As discussed in the subsections that follow, construction and operation of the project would not conflict with land use plans or policies such that significant environmental impacts would occur. Impacts would be less than significant.

City of Santa Clara General Plan. Part of the purpose of adopting a general plan is to avoid or mitigate environmental impacts. Project consistency with general plan policies helps ensure that environmental impacts are minimized.

The General Plan land use designation for the project site is High Intensity Office/ R&D. The General Plan states, "This classification is intended for high-rise or campus-like

developments for corporate headquarters, R&D, and supporting uses with landscaped areas for employee activities... Data centers under this designation are limited to those that serve the use on-site." (Santa Clara 2014). This General Plan designation is inconsistent with the project site's zoning designation of Light Industrial. For this reason, City of Santa Clara (City) staff recommended that the project owner apply for a General Plan amendment[1] to change the project site's General Plan land use designation to Light Industrial, which would make it consistent with the site's zoning designation of Light Industrial.

The General Plan's Light Industrial land use designation allows for development of data centers which serve off-site uses. The General Plan states, "This classification is intended to accommodate a range of light industrial uses, including general service, warehousing, storage, distribution and manufacturing. It includes flexible space, such as buildings that allow combinations of single and multiple users, warehouses, mini-storage, wholesale, bulk retail, gas stations, data centers, indoor auto-related uses and other uses that require large, warehouse-style buildings…" (Santa Clara 2014). Therefore, with a General Plan amendment that changes the land use designation to Light Industrial, the project's data center, which would serve off-site facilities, would be consistent with the uses designated by the General Plan for the project site.

The Light Industrial General Plan land use designation allows for some nuisance or hazardous uses, as indicated by the following statement in the General Plan: "Because uses in this designation may be noxious or include hazardous materials, places of assembly, such as religious institutions and schools, and uses catering to sensitive receptors, such as children and the elderly, as well as entertainment uses such as clubs, theaters and sports venues south of U.S. Highway 101, are prohibited" (Santa Clara 2014). However, there would be no significant environmental impacts from unmitigated hazardous or nuisance impacts (See **Sections 4.3 Air Quality**, **4.9 Hazards and Hazardous Materials**, **4.13 Noise**, and **4.17 Transportation** for more information).

The General Plan allows a maximum floor-area-ratio (FAR) of 0.60 for properties designated as Light Industrial. FAR is calculated as the ratio of the total building square footage (not including any building area used for parking) to the gross square footage of the building site (Santa Clara 2014). FAR is a tool for local governments to predict and limit the intensity of land uses and their resulting environmental impacts. A project with a higher than allowed FAR could cause environmental impacts related to increased vehicle miles travelled (VMT), or to aesthetics, such as area views. The FAR of the proposed project is 1.04, which exceeds the maximum of 0.60 given in the General Plan for the

1 The City Planning Commission is responsible for preparing and recommending amendment of the General Plan. The City Council is responsible for adoption of any amendments to the General Plan (Santa Clara 2014, pgs. 7-3 and 7-4). City amendments to the General Plan are reviewed by the ALUC for consistency with its CLUP (Santa Clara 2014, pg. 6-11). As discussed earlier, the project site is located outside of the AIA and therefore no CLUP policies apply to the project.

Light Industrial land use designation. However, the project's impacts to VMT and aesthetics would be less than significant, so the project's inconsistency with the General Plan's FAR maximum for the site would not result in environmental impacts. (See **Section 4.17 Transportation** for an analysis of the project's potential impacts on transportation using the VMT metric and **Section 4.1 Aesthetics** for an analysis of the project's visual impacts.)

General Plan land use policies pertaining to the project are listed below, along with a discussion of project conformance:

- 5.3.5-P7 Require building heights to conform to the requirements of the Federal Aviation Administration, where applicable.

The mechanical equipment screen on the roof is the highest point of the proposed project at approximately 103 feet, and it would exceed the FAA notification height of 95 feet. Therefore, the applicant is required to submit Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA. Transportation staff requested in Data Requests Set 2 number 56 that the applicant submit this form to the FAA (CEC 2023a). The FAA will then provide a review of the project and determine whether the project height is a hazard to aviation. The City, as the permitting agency for the project, would ensure consistency with this requirement and compliance with any of the FAA's conditions. Therefore, the project would be consistent with this General Plan policy. (See **Section 4.17 Transportation** for more information about FAA notification.)

- 5.3.5-P11 Construct sidewalks in industrial areas, with priority along streets served by existing or planned transit services.

There are already sidewalks adjacent to the project, so new sidewalk construction is not needed.

- 5.3.5-P12 Promote development, such as manufacturing, auto services and data centers, in Light and Heavy Industrial classifications to compliment employment areas and retail uses.

After the General Plan land use designation of the project site is changed to Light Industrial for consistency with the site's Light Industrial zoning designation, the project would be consistent with this policy. The project would provide a data center to compliment employment areas and retail uses in the area.

- 5.3.5-P19 Restrict the use and storage of hazardous materials for industrial uses within 500 feet of existing residential uses.

The southern edge of the project property is slightly over 500 feet from the nearest residences to the south of the project, according to measurements on Google Earth. The location of the back-up generators and their associated diesel tanks are located even further away from the residences, at the east side of the proposed data center building. Therefore, the project would not locate hazardous materials within 500 feet of residential

uses. For these reasons, after the project owner obtains a General Plan amendment from the City to change the project site's land use designation to Light Industrial, the project would not conflict with land use plans or policies such that significant impacts would occur.

City of Santa Clara Zoning Code. Part of the purpose of adopting a Zoning Code is to avoid or mitigate environmental impacts. Project consistency with the Zoning Code can help ensure that environmental impacts are minimized.

As discussed earlier, the project site's zoning designation is Light Industrial. The Zoning Code describes the Light Industrial zoning district as "intended to provide an optimum general industrial environment, and… to accommodate industries operating substantially within an enclosed building" (Santa Clara 2023, Section 18.48). The uses permitted in the Light Industrial zoning district include: any use permitted in the MP (Planned Industrial) district (which includes a variety of office, laboratory, and manufacturing uses); commercial storage and wholesale distribution warehouses; plants and facilities associated with industrial processes and repair; incidental retail sales of industrial products or products manufactured on-site, under certain conditions; incidental and accessory buildings, including storage buildings and exposed mechanical appurtenances, under certain conditions; and emergency shelters (Santa Clara 2023, Section 18.48.030).

The project's data center activities would take place in an enclosed building as required; however, the list of permitted uses in the Light Industrial zoning district does not include data centers (Santa Clara 2023, Section 18.48.030). Section 18.48.040 of the Zoning Code provides for allowance of "other uses not normally permitted, but that are… appropriate for an industrial area" with City approval of a conditional use permit (Santa Clara 2023, Section 18.48.040(e)(2)). The City has permitted data centers in the Light Industrial zoning district in the past, and the General Plan land use designation of Light Industrial lists data centers as an allowed use. Therefore, a data center could be allowed on the project site with the City's issuance of a conditional use permit.

The Light Industrial zoning district requires a front building setback of 15 feet from the street. Requirements for side and rear setbacks for buildings and structures not abutting streets is zero unless the property abuts a residential district. Here, the property does not abut a residential district and the closest area zoned for residential use is over 500 feet south of the property boundary. Maximum lot coverage is 75 percent, and maximum permitted height shall not exceed 70 feet (Santa Clara 2023, Chapter 18.48). The project meets all setback requirements, with each setback being at least 56.5 feet (and most being over 100 feet) (GI Partners 2022e). The project also meets the lot coverage requirements, with lot coverage being approximately 25 percent[2] (CEC 2023e), below the maximum lot coverage of 75 percent. However, the project exceeds the maximum

2 Staff calculated lot coverage using gross site area, not net site area, in accordance with Section 5.2.2 of the City of Santa Clara General Plan, which states that "both density and intensity are calculated on gross land area" (Santa Clara 2014).

permitted building height of 70 feet. The data center building would be approximately 87.5 feet in height (excluding the sound attenuating screen, not counted in the City's definition of building height, that is the highest point of the project at approximately 103.4 feet[3]) (GI Partners 2022e). The Zoning Code allows up to a 25 percent increase in the permitted building height with the City's approval of a Zoning Administrator modification (Santa Clara 2023, Section 18.90), which could bring the allowed height on the site to 87.5 feet in height.

The Santa Clara City Code establishes the number of vehicular parking spaces required for data centers as one space per 4,000 square feet of gross floor area. The floor area of the proposed data center is 244,068 square feet, meaning that 61.017 parking spaces are required. The project meets this requirement, providing 62 parking spaces for vehicles (GI Partners 2022e).

With Santa Clara City Council adoption of a General Plan amendment, approval of a conditional use permit for the data center use, and a minor modification for the project height, the project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.11.3 Mitigation Measures

None required.

4.11.4 References

CEC 2023a – California Energy Commission (CEC). (TN 248574). Data Requests Set 2, dated January 27, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

CEC 2023e – California Energy Commission (CEC). (TN 250596). Report of Conversation with Scott Galati, DayZen, LLC, applicant's representative re lot coverage, dated June 12, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

GI Partners 2022e – GI Partners. (TN 245769). Bowers Backup Generating Facility Application for SPPE Main, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

Santa Clara 2014 – City of Santa Clara (Santa Clara). City of Santa Clara 2010-2035 General Plan, amended December 9, 2014. Accessed January 2023. Available

3 According to Section 18.64.010(a) of Santa Clara's Zoning Code, "Subject to any other provision of law, the height limitations contained in the schedule of district regulations do not apply to spires, belfries, cupolas, antennas, water tanks, ventilators, chimneys, or other mechanical appurtenances usually required to be placed above the roof level and not intended for human occupancy or to be used for any commercial or advertising purposes" (Santa Clara 2023).

online at: https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan

Santa Clara 2023 – City of Santa Clara (Santa Clara). City of Santa Clara Zoning Code. Accessed January 2023. Available online at: https://www.codepublishing.com/CA/SantaClara/#!/SantaClara18/SantaClara1848.html#18.48

Santa Clara County 2016 – Santa Clara County ALUC (Santa Clara County). Comprehensive Land Use Plan, Santa Clara County, Norman Y. Mineta San Jose International Airport. Page 3-17 and Figure 8. Adopted by Santa Clara County Airport Land Use Commission, San Jose, CA, May 25, 2011; amended November 16, 2016. Accessed on January 23, 2023. Available online at: https://stgenpln.blob.core.windows.net/document/ALUC_SJC_CLUP.pdf

4.12 Mineral Resources

This section describes the environmental setting and regulatory background and discusses impacts associated with the construction and operation of the project with respect to mineral resources.

MINERAL RESOURCES Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

4.12.1 Environmental Setting

Information on mineral resources was compiled from published literature, maps, and review of aerial photographs. Impacts to mineral resources from project construction and operational activities were evaluated qualitatively based on the area occupied by the project, site conditions, expected construction practices, anticipated materials used, and the locations and duration of project construction and operational activities.

The project site, located in the city of Santa Clara within Santa Clara County, is in an area identified as Mineral Resource Zone 1 (MRZ-1) for aggregate materials by the State of California (DOC 2015). MRZ-1 refers to an area where available geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood for their presence exists (DOC 2015). The project site and surrounding area are not known to support significant mineral resources of any type and no mineral resources are currently being extracted in the city of Santa Clara (Santa Clara 2011).

The Division of Mine Reclamation's list of mines (as of September 15, 2022), referred to as the Assembly Bill (AB) 3098 List and regulated under SMARA, identifies the following facilities in Santa Clara County (DOC 2016):

- Curtner Quarry – Located approximately 8½ miles northeast.
- Hanson Permanente Cement Quarry – Located approximately 8½ miles southwest.
- Lexington Quarry – Located approximately 12 miles south.
- Stevens Creek Quarry Plant 1 - Located approximately 8 miles southwest.

The Department of Conservation, Division of Mine Reclamation maps two additional sites that are not listed on the current AB 3098 list. These quarries are identified as the Azevedo Quarry located at Communication Hill, about 9 miles southeast of the site and the Serpa Pit located about 8 miles northeast of the site (DOC 2016). There are no mines included on the AB 3098 list that are regulated under SMARA located within the city of Santa Clara.

Regulatory Background

Federal

No federal regulations related to mineral resources apply to the project.

State

Surface Mining and Reclamation Act. SMARA requires that the State Geologist classify land into MRZ or Scientific Zones according to the known or inferred mineral potential of the land (Pub. Resources Code, §§ 2710-2796).

MRZs are defined as the following (DOC 2015):

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood for their presence exists.
- MRZ-2: Areas where adequate information indicates that significant deposits are present, or where it is judged that a high likelihood for their presence exists. The guidelines set forth two requirements to be used to determine if land should be classified as MRZ-2:
    - The deposit must be composed of material that is suitable as a marketable commodity.
    - The deposit must meet threshold value. The projected value (gross selling price) of the deposit, based on the value of the first marketable product, must be at least $5 million (1978 dollars).
- MRZ-3: Areas containing mineral deposits, but their significance cannot be evaluated from available data.
- MRZ-4: Areas where available information is inadequate for assignment to any other MRZ category.

Scientific Zones are defined as areas containing unique or rare occurrence of rocks, minerals, or fossils that are of outstanding scientific significance.

Local

No local regulations related to mineral resources apply to the project.

4.12.2 Environmental Impacts

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

Construction and Operation

No Impact. The project site is in an area that does not contain any known or designated mineral resources. Therefore, the project would not result in the loss of availability of a known mineral resource.

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Construction and Operation

No Impact. The project site is not delineated in the City of Santa Clara General Plan (Santa Clara 2011) or other land use plan as a locally important mineral resource recovery site. Also, the project site is in an area and does not contain any known or designated mineral resources. Therefore, for these reasons the project would not result in the loss of availability of a locally important mineral resource recovery site.

4.12.3 Mitigation Measures

None required.

4.12.4 References

DOC 2015 – California Department of Conservation (DOC). Surface Mining and Reclamation Act (SMARA) Mineral Lands Classification (MLC) data portal. Mineral Land Classification:
Update of Mineral Land Classification: Aggregate Minerals in the South San Francisco Bay Production-Consumption Region. Author: Susan Kohler-Antablin (1996) DMG Open File Report 96-03. Accessed on: September 19, 2022. Available online at: https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc

DOC 2016 – California Department of Conservation (DOC). AB 3098 List. This list is updated daily. Accessed on: September 19, 2022. Available online at: https://www.conservation.ca.gov/dmr

Santa Clara 2011 – City of Santa Clara (Santa Clara). Integrated Final Environmental Impact Report, Draft 2010-2035 General Plan, Volume I, EIR text. Accessed on: September 26, 2022. Available online at: https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan

4.13 Noise

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the project related to noise.

NOISE Would the project result in:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

4.13.1 Environmental Setting

The proposed project site is zoned Light Industrial (ML) (GI Partners 2022e). The area surrounding the project site consists of ML land uses to the north, east, and west. To the west-southwest of the project site is Bowers Avenue. In addition, approximately 425 feet to the south, the CalTrain corridor separates the project site from residential land uses (approximately 500 feet from the project boundary). The nearest airport is The San José Mineta International Airport (formerly Norman Y. Mineta San Jose International Airport) approximately 1.75 miles east of the project site.

The applicant conducted short-term and long-term noise surveys to characterize ambient noise in the areas surrounding the project site. Long-term noise surveys were conducted from June 29 through June 30, 2021 (48-hours), at two monitoring locations—LT-1 located at the project's northern boundary and LT-2 approximately 400 feet southwest of the project boundary on an industrial land use site. The location of LT-1 represents the ambient noise levels at the project site. LT-2 represents the existing noise environment at the nearest residential receptor directly across the CalTrain line (GI Partners 2022d).

The results of the survey for LT-1 provided average daytime and nighttime ambient noise levels of approximately 59 and 58 decibels on the A-weighted scale (dBA) L_{eq}[1], respectively. Additionally, the survey provided average daytime and nighttime ambient noise level at the residential receptor (LT-2) of approximately 60 and 59 dBA L_{eq}, respectively (GI Partners 2022d). The survey also provided the maximum noise level, L_{max}, of approximately 83 dBA at LT-2, primarily due to passing trains (GI Partners 2022d).

Short-term ambient noise surveys were also conducted at four locations within the project boundary—at the northwest, northeast, southwest and southeast corners of the project site. The average noise levels were between 53 and 59 dBA L_{eq}.

The predominant long-term ambient noise sources are the nearby and distant traffic, as well as cooling and mechanical noise from various facilities surrounding the project footprint. Additionally, noise sources that elevate the background ambient noise include trains and vehicles passing by the project site (GI Partners 2022d).

Regulatory Background

Thresholds of Significance

The California Environmental Quality Act (CEQA) Guidelines state that a project would normally be considered to have a significant impact if noise levels conflict with adopted environmental standards or plans, or if noise levels generated by the project would substantially increase existing noise levels at noise-sensitive receivers on a permanent or temporary basis. CEQA does not define what noise level increase would be substantial. Generally, an increase of 3 dBA is noticeable and an increase of 5 dBA is distinct. Other factors, such as the frequency of occurrence of the noise and time of day/night it occurs, are also commonly considered in determining if such an increase is clearly significant or not.

There are no adopted thresholds for an increase in dBA level to be considered a significant impact for construction activities. Noise due to construction activities are considered to be less than significant if the construction activity is temporary and the use of heavy equipment and noisy activities is limited to daytime hours. However, an increase of 10 dBA or more during the day can be perceived as noisy (triggering a community reaction) and warrant additional measures to address the noise levels. An increase of 10 dBA corresponds to a doubling of loudness or dBA level and is generally considered to be the starting point at which significant noise impacts may occur (triggering a community reaction). It is very difficult to identify the exact level of noise resulting from construction because it fluctuates based on many factors over the course of a week, day, or even hour. It also depends on other factors, such as intervening structures, land topography and land cover. For example, intervening structures block or impede sound waves, and undulating topography and land roughness would play a role in attenuating the

1 L_{eq} is a measurement of average energy level intensity of noise over a given period of time.

propagation of noise waves. Therefore, performance standards (i.e., a complaint and redress process) are ultimately used as a backstop measure to address any impacts that are perceived by the community.

In September 2013, the California Department of Transportation (Caltrans) released the Transportation and Construction Vibration Guidance Manual (Caltrans 2013). This manual includes the Federal Transit Administration's (FTA) methods and findings. The Caltrans manual states that for construction activities that generate vibration, the threshold of human response begins at a peak particle velocity (ppv) of 0.16 inch per second (in/sec). This is characterized by Caltrans as a "distinctly perceptible" event with an incident range of transient to continuous (Caltrans 2013). A level of 0.20 in/sec has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.

Local

City of Santa Clara 2010-2035 General Plan. The City of Santa Clara 2010-2035 General Plan (General Plan) describes the levels of exterior noise considered compatible for various land uses to guide land use planning decisions. The Santa Clara City Code, discussed below, establishes more specific sound limits (Santa Clara 2023). The General Plan also includes several policies that aim to keep noise levels to within acceptable levels and avoid nuisance to residents. The following are General Plan policies applicable to the project:

- Policy 5.10.6-P1: Review all land use and development proposals for consistency with the General Plan compatibility standards and acceptable noise exposure levels defined on Table 5.10-1 [of the General Plan].
- Policy 5.10.6-P3: New development should include noise control techniques to reduce noise to acceptable levels, including site layout (setbacks, separation and shielding), building treatments (mechanical ventilation system, sound-rated windows, solid core doors and baffling) and structural measures (earthen berms and sound walls).
- Policy 5.10.6-P4: Encourage the control of noise at the source through site design, building design, landscaping, hours of operation and other techniques.
- Policy 5.10.6-P5: Require noise-generating uses near residential neighborhoods to include solid walls and heavy landscaping along common property lines, and to place compressors and mechanical equipment in sound-proof enclosures.

City of Santa Clara Zoning Code (City Code). Chapter 9.10 (noise ordinance) of the City Code applies to the regulation of noise and vibration for this project. Section 9.10.040 specifies the exterior noise limits that apply to land use zones within the city. The City of Santa Clara's (City) exterior noise limit is 75 dBA (anytime) for heavy industrial land use zones, 70 dBA (anytime) for ML land use zones, 65 dBA for daytime and 60 dBA for nighttime for commercial land use zones, and 55 dBA daytime and 50 dBA nighttime for residential land use zones. The City's noise limits for stationary noise sources are not applicable to emergency work, including the operation of emergency generators during an emergency (Section 9.10.070); however, the intermittent testing of emergency

generators is subject to the local noise regulations previously discussed in the City Code (Section 9.10.040).

4.13.2 Environmental Impacts and Mitigation Measures

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Less Than Significant Impact. The City Code exempts construction activities from the established noise limits. Demolition and construction activities for the project would take approximately 24 months and likely utilize equipment that could generate noise levels that exceed ambient noise, such as bulldozers and jackhammers. Demolition and construction noise can be significant for short periods of time at any particular location. The highest noise levels would often be generated during grading and excavation, while lower noise levels normally occur during building construction. Large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate noise levels up to 85 to 90 dBA at 50-feet. Typical hourly average construction-generated noise levels are 61 to 90 dBA, measured at 50-feet from the site during busy construction periods.

Construction activities would produce intermittent noise levels between 55 to 68 dBA L_{eq} at the nearest residences. This would increase the ambient noise levels, on average, by up to 8 dBA. This is less than 10 dBA and would likely have a less-than-significant impact. Additionally, the elevated noise levels from construction activities would be lower than those from passing trains. Trains pass by four times per hour during peak commute (6 a.m. to 9 a.m. and 4 p.m. to 7 p.m.) and two times per hour during non-peak commute (CalTrain 2021). According to the results of the ambient noise survey provided in the SPPE application, trains intermittently elevate noise levels at these residences to up to 83 dBA L_{max}—23 dBA above the existing daytime ambient level of 60 dBA L_{eq} at this location.

The applicant proposed mitigation that would reduce impacts from construction noise on noise-sensitive land uses (PD NOI-1.1). These measures are similar to the series of performance standards required by the City as part of its condition of approval for construction (CEC 2023d). These performance standards are ultimately used as a backstop measure to address any noise impacts that might be perceived by the community—the applicant has acknowledged and proposed to implement them. These standards are quite effective and are summarized below:

- Submit a noise control plan to the City for approval.
- Limit construction work to daytime hours and away from sensitive receptors as much as practicable.
- Use quiet construction equipment when possible.

- Locate staging and parking areas away from noise sensitive receptors.
- Establish speed limits for construction vehicles.
- Establish a redress and complaint process.

Noise impacts from project construction would not be in excess of adopted environmental standards or plans. Therefore, noise impacts from project construction would be less than significant.

Operation

Less Than Significant Impact. The proposed emergency backup generators (gensets) would provide backup power to the data center buildings in the event of an equipment failure or other conditions resulting in an interruption of the electricity delivered from Silicon Valley Power (SVP) via Pacific Gas and Electric Company (PG&E) utility lines. The gensets would be enclosed in equipment yards located adjacent to the northeastern side of the building. The General Plan along with the City Code (Section 9.10.040) establish mitigation and noise level performance standards to control noise within the city. The General Plan policy includes goals to minimize operational noise impacts from existing and new industrial and commercial development to protect sensitive land uses from noise intrusions. In accordance with the General Plan, the project's maximum sound level at nearby residential use properties must be 55 dBA during the hours of 7 a.m. to 10 p.m., and 70 dBA anytime at nearby ML use properties, including during times of testing of the gensets. However, the City Code does not apply to the operation of the gensets during an emergency, such as the interruption of electricity delivered from SVP via PG&E utility lines.

The applicant would use gensets that ensure sufficient exhaust silencing and other design measures if required, such that the project meets the City Code noise requirements. The project would include 32 gensets that would be located at the northeastern end of the project site and would be housed in acoustically enhanced enclosures. Each genset would be tested only during daytime hours. An 8-foot-high wall would be constructed around the perimeter of the generator yard and would aid in mitigating noise levels at adjacent industrial use properties. Heating, ventilation, and air conditioning (HVAC) equipment, including chiller plant modules and condensing units, would be located on the rooftop of the data center building. The perimeter of the rooftop would include an 11 foot sound attenuating mechanical equipment screen mitigating noise levels generated from the HVAC (GI Partners 2022d).

The applicant performed an operational noise impact assessment for the project using SoundPLAN. The noise assessment was modeled in two operational modes: 1) normal, which assumes day-to-day operating conditions, without any of the gensets operating, and 2) testing, which models one genset testing concurrently with full operation of all HVAC equipment and other air-handling units.

Noise levels during "normal" mode would not increase the ambient noise levels to nearby residences and adjacent land uses. Moreover, they would be below the City's daytime noise level limits at nearby residential and industrial land uses. At nearby residential receptors, the noise levels during normal operations would be 48 dBA L_{eq} and at the adjacent industrial land use north of the project the noise level would be 54 dBA L_{eq}. Both the daytime ambient noise level and City's daytime noise level limit at residential receptors[2] are 60 dBA L_{eq}. The daytime ambient noise level and City's daytime noise level limit at the industrial land uses are 59 and 70 dBA L_{eq}, respectively.

Noise levels during "testing" mode would not exceed the City's noise level limits at nearby residential and industrial land uses. At nearby residential receptors the noise level would be 48 dBA L_{eq}. This is below both the ambient level and City's limit of 60 dBA L_{eq}. At the industrial land use northeast of the project site, the noise level due to concurrent genset testing and normal operation would be 63 dBA L_{eq}. This would be below the City's noise level limit at adjacent industrial land uses (70 dBA L_{eq}).

Humming noise, or white noise, from the operation of an industrial facility, such as a data center, is usually associated with either, equipment imbalance that can occur in older or poorly designed equipment, or due to the lack of noise-control features. The project, on the other hand, would be a new, state of the art facility, incorporating low-noise equipment and noise-control features. The project is not expected to generate a humming noise or any other tonal noise discernable at the nearby residences. Temporary emergency operations of gensets or other emergency equipment necessary to provide services during an emergency are exempt from noise standard criteria set by the City's Municipal Code (9.10.070). It should also be noted that based on historical data, such emergency operation has occurred infrequently, and this project is not expected to be different.

Noise impacts from project operation would not be in excess of adopted environmental standards or plans. Therefore, noise impacts from project operation would be less than significant.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction

Less Than Significant Impact. This analysis relies on the vibration thresholds identified by Caltrans to determine the significance of vibration impacts related to adverse human reaction. The threshold of human response begins at a peak particle velocity (PPV) of 0.16 in/sec. Caltrans characterizes this as a "distinctly perceptible" event (Caltrans 2013).

2 The City's daytime and nighttime limits are adjusted based on the General Plan ambient noise adjustment criteria.

A level of 0.20 in/sec has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.

Impact or vibratory pile driving would not be performed as a method of construction activity for the project, but there would be other construction activities that would generate groundborne vibrations at the immediate vicinity of the work area (GI Partners 2022e, Section 4.13.2.1).

Demolition and construction activities such as drilling, use of jackhammers, rock drills, and other high-power or vibratory tools, as well as rolling stock equipment such as tracked vehicles and compactors, may generate substantial vibration in the immediate site vicinity. Jackhammers can cause a groundborne vibration rate of 0.035 in/sec at 25 feet (less than the threshold of human response) and vibratory rollers can cause a groundborne vibration of 0.21 in/sec at 25 feet, while typical vibration rate caused by impact pile driving at 25 feet is 0.64 in/sec (Caltrans 2013). However, vibration rates dissipate rapidly with distance, and the vibration rate generated by an impact pile driver drops to 0.14 in/sec at a distance of 100 feet from the source. The closest structures to the project site boundary is the industrial building 200 feet to the northeast. Demolition and construction activities such as drilling, use of jackhammers, rock drills, and other high-power or vibratory tools, as well as rolling stock equipment such as tracked vehicles and compactors, may generate substantial vibration in the immediate site vicinity. Jackhammers can cause a groundborne vibration rate of 0.035 in/sec at 25 feet (less than the threshold of human response) and vibratory rollers can cause a groundborne vibration of 0.21 in/sec at 25 feet (Caltrans 2013). The impact would be less than significant.

Operation

Less Than Significant Impact. Sources of groundborne vibration associated with project operation would include the gensets and rooftop equipment. These pieces of equipment would be well-balanced, as they are designed to produce very low vibration levels (less than the threshold of human response) throughout the life of a project. In most cases, even when there is an imbalance, they could contribute to ground vibration levels only in the vicinity of the equipment and would be dampened within a short distance. Furthermore, the gensets would be equipped with specifications that ensure sufficient exhaust silencing to reduce vibration. Therefore, vibration impacts due to project operation would be less than significant.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Construction and Operation

Less Than Significant Impact. The nearest airport to the project site is the San Jose Mineta International Airport, located approximately 1.8 miles east of the project site. The project site is located outside the Airport Noise Zone (the 65 CNEL[3] contour, as set forth by state law in the Public Utilities Code, section 21601 et. seq), as defined in the Comprehensive Land Use Plan, adopted by the Santa Clara County Airport Land Use Commission, for the Airport. The project site is not in the vicinity of a private airport, and it would not place sensitive land uses within the Airport noise contour. Thus, the project would not combine with the Airport to expose people to excessive noise levels. Impacts would be less than significant.

4.13.3 Mitigation Measures

None required.

4.13.4 References

Caltrans 2013 – California Department of Transportation (Caltrans). Technical Noise Supplement to the Caltrans Traffic Noise Analysis Protocol, A Guide for Measuring, Modeling, and Abating Highway Operation and Construction Noise Impacts, Division of Environmental Analysis, Environmental Engineering. September 2013. Report No. CT-HWANP-RT-13069.25.3. Accessed on: April 27, 2020. Available online at: http://website.dot.ca.gov/env/noise/docs/tens-sep2013.pdf

Caltrain 2021 – Caltrain. Weekday Service Schedule – Effective August 30, 2021. Accessed online: December 17, 2021. Available online at: https://www.caltrain.com/schedules/weekdaytimetable/Weekday_Service_Changes_-_Effective_August_30__2021.html

CEC 2023d – California Energy Commission (CEC). (TN 249467). Record of Conversation with City of Santa Clara Staff Re: City of Santa Clara Permitting Conditions, dated March 28, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

3 CNEL is the average sound level over a 24-hour period, with a penalty of 5 dB added between 7 pm and 10 pm and a penalty of 10 dB added for the nighttime hours of 10 pm to 7 am. CNEL is frequently used in regulations of airport noise impact on the surrounding community.

GI Partners 2022d – GI Partners. (TN 245768). Bowers Backup Generating Facility Application for SPPE Appendices F and G, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

GI Partners 2022e – GI Partners. (TN 245769). Bowers Backup Generating Facility Application for SPPE Main, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

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Santa Clara 2023 – City of Santa Clara (Santa Clara). City of Santa Clara City Code, Chapter 9.0: Regulation of Noise and Vibration. Accessed on April 28, 2023. Available online at: https://www.codepublishing.com/CA/SantaClara/html/SantaClara09/SantaClara0910.html

4.14 Population and Housing

This section describes the environmental setting and regulatory background and discusses the impacts associated with the construction and operation of the project with respect to population and housing.

POPULATION AND HOUSING Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

4.14.1 Environmental Setting

The project is proposed in the city of Santa Clara in Santa Clara County. Staff considers the city of Santa Clara as the study area for population and housing-related impacts and the San José-Sunnyvale-Santa Clara Metropolitan Statistical Area (MSA), which covers San Benito and Santa Clara counties, as the setting for labor supply for the project. The project site is currently developed with an approximately 55,000 square foot two-story office building and associated paved surface parking. Existing uses on the site are commercial and light industrial in nature and include a credit union and a computer hardware manufacturer.

The project's construction and operations workforce is expected to be derived from the greater Bay Area, which includes Santa Clara and the nearby cities of Sunnyvale, Cupertino, San José, Campbell, and Milpitas (GI Partners 2022f). Staff considers that the local workers[1] from the greater Bay Area are not likely to temporarily (during construction) or permanently (during operations) move closer to the project.

Population Growth

The city of Santa Clara has an estimated land area of 18 square miles. The Housing Element of the Comprehensive General Plan for the City of Santa Clara (adopted December 2014) forecasts population and housing estimates in three phases, reflecting

1 Workers with a greater commute would be considered non-local and would tend to seek lodging closer to the project site (temporarily during construction or permanently during operations).

the near (2010-2015), mid (2015-2023), and long term (2023-2035) horizons. By 2035, the general plan would allow for an additional 32,400 residents (Santa Clara 2014, pg. 2-4). The 2020 population for the city is 127,647 people (U.S. Census 2020).

Association of Bay Area Governments data is used in **Table 4.14-1** to show household growth projections between 2015 and 2050. The Association of Bay Area Governments divides the Bay Area counties into sub-county areas, called superdistricts. The superdistricts are combinations of cities, towns, and unincorporated areas that represent a more localized pattern of growth within the Bay Area (ABAG 2021a, page 122). The historical and projected households for the superdistricts within proximity of the project site, plus Santa Clara County is shown in **Table 4.14-1**. The household projections between 2015 and 2050 show a growth ranging from 42 to 199 percent or 1.2 and 5.7 percent per year in superdistricts throughout a 6-mile radius of the project site.

TABLE 4.14-1 HISTORICAL AND PROJECTED HOUSEHOLDS

Superdistrict	Area	2015	2050	Projected Household Change 2015-2050 Number	Projected Household Change 2015-2050 Percent (%)	Projected Household Change 2015-2050 Percent per Year (%)
North Santa Clara County	Sunnyvale, Santa Clara (partial), Mountain View (partial), Milpitas (partial), San Jose (partial), Palo Alto (partial)	107,000	320,000	212,000	199%	5.7%
West Santa Clara County	Los Gatos, Monte Sereno, Saratoga, Cupertino, Campbell (partial), Santa Clara (partial)	121,000	172,000	51,000	42%	1.2%
Central Santa Clara County	Campbell (partial), San Jose (partial)	105,000	168,000	63,000	60%	1.7%
East Santa Clara County	Milpitas (partial), San Jose (partial)	108,000	180,000	453,000	67%	1.9%
Santa Clara County		623,000	1,075,000	602,061	73%	2.1%

Source: ABAG 2021b

Housing

Table 4.14-2 presents housing supply data for the cities within proximity of the project site, plus Santa Clara County as a whole. Year 2023 housing estimates indicate 34,781 vacant housing units within Santa Clara County, representing a vacancy rate of 5.0 percent (CA DOF 2023).

TABLE 4.14-2 HOUSING SUPPLY ESTIMATES IN THE PROJECT AREA

Housing Supply		2023 Total	2023 Vacant
Campbell	Number	18,451	926
	Percent	100	5.0
Cupertino	Number	21,787	1,108
	Percent	100	5.1
Milpitas	Number	25,769	765
	Percent	100	3.0
San José	Number	345,798	15,114
	Percent	100	4.4
Santa Clara	Number	53,370	3,411
	Percent	100	6.4
Sunnyvale	Number	63,111	2,966
	Percent	100	4.7
Santa Clara County	Number	701,539	34,781
	Percent	100	5.0

Source: CA DOF 2023.

Labor Supply

Table 4.14-3 presents the California Employment Development Department 2018-2028 Occupational Employment Projections for the project's construction occupations in the San José-Sunnyvale-Santa Clara MSA (CA EDD 2022). The projections are estimates of the expected employment for individual occupations. For the year 2028, the total projected employment estimate of the construction occupations within the project's MSA (identified in Table 4.14-3) would be 37,080 workers. Given these ten-year projections, the region is expected to have an ample supply of construction trades workers for the applicant's expected groundbreaking date of 2023.

TABLE 4.14-3 PROJECTED EMPLOYMENT GROWTH			
San José-Sunnyvale-Santa Clara MSA	**Year 2018**	**Year 2028**	**Percent Change**
Carpenters	7,160	7,800	8.9
Construction Laborers	7,550	8,070	6.9
Electricians	5,390	6,020	11.7
Structural Iron and Steel Workers	430	440	2.3
Plumbers, Pipefitters, and Steamfitters	2,360	2,680	13.6
Operating Engineers and Other Construction Equipment Operators	1,310	1,370	4.6
Cement Masons and Concrete Finishers	1,140	1,130	-0.9
Roofers	1,480	1,420	-4.1
Sheet Metal Workers	600	640	6.7
Painters, Construction and Maintenance	3,800	4,170	9.7
Supervisors of Construction and Extraction Workers	3,060	3,340	9.2
Total	34,280	37,080	9.2

Note: Long-term (10 year) projections are based on annual average employment levels by industry for the base (2018) and target (2028) years. Source: CA EDD 2022.

Regulatory Background

No regulations related to population and housing apply to the project.

4.14.2 Environmental Impacts

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction

Less Than Significant Impact. The project would not directly or indirectly induce substantial unplanned growth in the city of Santa Clara. The project does not propose new housing, and it would not facilitate growth through the extension of roads, water supply pipelines, or other growth-inducing infrastructure. While the project includes an emergency backup generating facility, the electricity produced would directly serve the data center if power interruption occurred. The Bowers Backup Generating Facility (BBGF) would also support redundant critical cooling equipment and other general building and life safety services. The combined facility (i.e., the data center and backup generating facility) would not be an extension of infrastructure serving customers or entities beyond the boundaries of the project. Therefore, there would be no indirect population growth.

The only construction activities for the BBGF would involve construction of the generation yard, which includes the construction of concrete slabs, stacking structures, fencing, installation of underground and above ground conduit and electrical cabling to

interconnect to the Bowers Data Center (BDC) switchgear, and placement and securing of the generators. Construction of the generation yard and placement of the generators is expected to take six months per phase, with the full deployment of the generators expected to take place in four to six years. Project construction workforce is estimated to be between 10 and 15 workers (GI Partners 2022e).

Construction activities for the BDC include demolition, grading, excavation, and construction and would take approximately 24 months. The construction workforce would average 100 workers per month and have an estimated peak of 125 per month (GI Partners 2022e).

As shown in **Table 4.14-3,** there is a sufficient local construction workforce, with an estimated 37,080 construction trades workers projected by 2028 in the project's MSA that would accommodate the projected labor needs for construction of the project (CA EDD 2022). The peak workforce of 125 workers per month for the BDC would account for 0.3 percent or less of the available projected construction trades workers in the project's MSA. With a local workforce available to serve the project during the expected construction period, it is not expected that workers would come from outside of the Bay Area. If a few construction workers were to seek temporary lodging closer to the project site, there would be sufficient housing supply according to **Table 4.14-2**. Therefore, the project's construction workforce would not directly or indirectly induce substantial population growth in the project area. The impact from project construction would be less than significant.

Operation

Less Than Significant Impact. The BDC would create a relatively low employment use, supporting a similar amount or fewer jobs than the existing uses on the site. It is anticipated that there would be between 33 to 35 people working in the building on an average day (GI Partners 2023a). The backup generators would operate for short periods for testing and maintenance purposes and otherwise would not operate unless there is a disturbance or interruption of the utility supply. With access to a large labor supply in the Bay Area, operation workers are not likely to permanently relocate closer to the project site. However, if some workers were to permanently relocate closer to the project, it is unlikely that few workers would directly or indirectly induce a substantial population growth in the project area. The impact from project operation would be less than significant.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction and Operation

No Impact. The project would demolish the current office (light industrial) building on the site to replace it with a four-story 244,068 square foot data center building, utility

substation, backup generator structure and related equipment yard, surface parking, landscaping, and utility pipeline connections. The current structures do not contain any housing. As a result, the project would not displace any people or housing, and both construction and operation of the project would not require replacement housing to be constructed elsewhere. No impact would occur.

4.14.3 Mitigation Measures

None required.

4.14.4 References

ABAG 2021a – Association of Bay Area Governments (ABAG). Plan Bay Area 2050. October 1, 2021. Available online at: https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021_rev.pdf

ABAG 2021b – Association of Bay Area Governments (ABAG). Plan Bay Area 2050 Growth Pattern. January 21, 2021. Available online at: https://www.planbayarea.org/sites/default/files/FinalBlueprintRelease_December2020_GrowthPattern_Jan2021Update.pdf

CA DOF 2023 – California Department of Finance (CA DOF). E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2022-2023. May 2023. Available online at: https://dof.ca.gov/Forecasting/Demographics/Estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2023/

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Santa Clara 2014 – City of Santa Clara (Santa Clara). General Plan Land Use Component and Housing Element Updates, EIR Addendum. Prepared by ESA, November 2014. Adopted December 9, 2014. Available online at: https://www.santaclaraca.gov/home/showdocument?id=46446

4.15 Public Services

This section describes the environmental setting and regulatory background and discusses impacts associated with the construction and operation of the project with respect to public services.

PUBLIC SERVICES Would the project	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

4.15.1 Environmental Setting

The proposed project would be located in the city of Santa Clara in Santa Clara County. Fire and police protection services are provided to the project site from departments within the City of Santa Clara (City). Park facilities and other public facilities such as libraries are also provided by the City. The project site is within the Santa Clara Unified School District (SCUSD) boundaries. Therefore, the study area for public services-related impacts is the city of Santa Clara.

The project site is currently developed with an approximately 55,000 square foot two-story office building and associated paved surface parking and is thus currently served by City public service providers. Existing uses on the site are commercial and light industrial in nature and include a credit union and a computer hardware manufacturer.

Fire Protection

Fire protection services for the project site are provided by the City of Santa Clara Fire Department (SCFD). The SCFD currently has nine fire stations (with an additional station planned to be constructed by 2025) with equipment consisting of eight engines, two trucks, one rescue/light unit, one hazardous materials unit, and two command vehicles (SCFD 2022). The nearest fire stations to the project site are Station 9, located at 3011

Corvin Drive, approximately one mile west of the project site, and Station 2, located at 1900 Walsh Avenue, approximately 1.5 miles east of the project site.

The SCFD has approximately 154 fire service personnel (SCFD 2021). In 2021, SCFD responded to approximately 9,603 incidents. Of the incidents SCFD responded to, approximately 71 percent were for medical emergencies including vehicle injury accidents, 3 percent for fires, and 26 percent were for other incidents (rescues, good intent calls, and false alarms) (SCFD 2021). The SCFD meets its goal of responding to all emergencies within six minutes, 90 percent of the time (SCFD 2022).

Police Protection

Police protection would be provided by the Santa Clara Police Department (SCPD). The SCPD consists of 232 full-time employees and a varying number of part-time or per diem employees, community volunteers, police reserves, and chaplains. The SCPD has 1.13 authorized sworn officers per thousand by population. Police headquarters are located at 601 El Camino Real, approximately 3.3 miles southeast of the project site (SCPD 2022).

The City of Santa Clara 2010-2035 General Plan identifies the goal of maintaining an average response time of three minutes for all areas of the city (Santa Clara 2010). In 2021, the SCPD handled 61,421 calls for service, with an average response time for Priority 1 (emergency call which requires immediate response and there is reason to believe that an immediate threat to life exists) calls of 2 minutes and 59 seconds (SCPD 2022).

Schools

The project site is located within the SCUSD. The district covers 56 square miles and serves the cities of Santa Clara, San José, Sunnyvale, and Cupertino (SCUSD 2022a). The SCUSD enrolled 11,935 students in the 2021-2022 school year (CDE 2022). SCUSD facilities include: 1 adult school, 6 high schools, 4 middle schools, 1 K-8 school, 18 elementary schools, and 1 community school (SCUSD 2022b).

The nearest public schools to the project site are:

- Bracher Elementary School, located at 2700 Chromite Drive, approximately 0.26 mile southeast of the project site;
- Cabrillo Middle School, located at 2550 Cabrillo Avenue, approximately 1.1 miles southeast of the project site; and
- Adrian Wilcox High School, located at 3250 Monroe Street, approximately one mile southwest of the project site.

There are two nearby private schools, Santa Clara Christian School, located approximately one mile southwest, and Cabrillo Montessori School of Silicon Valley, located approximately one mile south of the project site (Google Maps 2022).

Parks

The Santa Clara Parks and Recreation Department provides parks and recreational services in the city of Santa Clara. It is responsible for maintaining and programming the various parks and recreation facilities and works cooperatively with public agencies in coordinating all recreational activities within the city. The nearest public park to the project site is Bracher Park, approximately 0.2 mile southeast of the project site. San Thomas Aquino Creek Trail also provides recreational opportunities in the project area and is located approximately 0.7 mile east of the project site (Google Maps 2022).

Other Public Facilities

Library services are provided by the Santa Clara City Library. The city of Santa Clara is served by the Central Park Library (approximately 2.5 miles south of the project site), Mission Branch Library (approximately 3.0 miles southeast of the project site), and Northside Branch Library (approximately 4.0 miles southwest of the site) (GI Partners 2022e).

Regulatory Background

Federal

No federal regulations related to public services apply to the project.

State

No state regulations related to public services apply to the project.

Local

City of Santa Clara 2010-2035 General Plan. The City of Santa Clara 2010-2035 General Plan (General Plan) describes goals and policies for the City to actively seek additional park and open space as residential and employment populations increase (Santa Clara 2010). The General Plan's implementation policies are designed to maintain a standard ratio of 2.4 acres of parkland per 1,000 residents. Staff identified the following applicable public services policy in Section 5.9 of the General Plan:

- 5.9.1-P16 – Encourage non-residential development to contribute toward new park facilities to serve the needs of their employees.

District Board Policy 7211. District Board Policy (BP 7211 Facilities: Developer Fees) allows the Board of Trustees to establish, levy, and collect developer fees on residential, commercial, and industrial construction within the district.

- Government Code section 65995 expressly provides that "[t]he payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995… are hereby deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or

development of real property, or any change in governmental organization… on the provision of adequate school facilities."

4.15.2 Environmental Impacts

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

i. Fire protection?

Construction

No Impact. Project construction would require a temporary workforce. The construction workforce for the Bowers Backup Generating Facility (BBGF) would require an estimated 10 to 15 workers per month, while the Bowers Data Center (BDC) would require an estimated 125 workers per month (GI Partners 2022f). The city of Santa Clara is a self-identified employment hub, with approximately 70 percent of employees commuting from other cities (Santa Clara 2010). As stated in section **4.14 Population and Housing**, the anticipated construction workforce for the project would likely be drawn from the greater Bay Area. Based on the proximity of the available workforce to the project, construction workers from the surrounding cities and counties are not likely to temporarily relocate closer to the project site. Therefore, this workforce is unlikely to increase the need for fire services or affect service ratios to the extent that new or physically altered fire protection facilities would be necessary.

Project construction activities that could pose a risk for fire due to heated exhaust or sparks include the use of grinders, cranes, excavation equipment, and vehicles. Staff's proposed mitigation measure **AQ-1** requires the project to properly tune and maintain construction equipment in accordance with manufacturer's specifications which would minimize the risk of fire, refer to Section **4.3 Air Quality** of this environmental impact report for more information. Potential effects on the need for fire protection response as a result of the project's construction phases would be temporary and would cease at the end of project construction. In addition, the nearest fire station currently provides fire protection to the site's existing office building. The conversion of the site to a data center use with its backup generators, would not alter the fire station's current response times. Fire protection services would be able to be maintained without the need for new or physically altered facilities. Therefore, as there would be no new or physically altered fire protection facilities, no impact would result from construction.

Operation

No Impact. The BDC project would consist of a 244,068 square foot four-story data center building, utility substation, generator equipment yard (the BBGF), surface parking and landscaping and utility pipeline connections. The project would be a low employment-creating use, supporting a similar amount or fewer jobs than the existing uses on the site. It is anticipated that there would be between 33 to 35 people in the building on an average day, with 17 to 30 people expected to be in the building at the same time (GI Partners 2023a). Based on the proximity of the available workforce to the project, operation workers from the surrounding cities and counties are not likely to permanently relocate closer to the project site. However, there may be a few workers that permanently relocate closer to the project. Therefore, this workforce is unlikely to increase the need for fire services or affect service ratios or other performance objectives to the extent that new or physically altered fire protection facilities would be necessary.

Project elements that could pose a risk for fire include the operation of the emergency backup generators because of the use of diesel fuel (a flammable liquid), as well as the electrical substation, which could overheat and potentially spark a fire. Emergency generators would run for short periods (in duration and frequency) for testing and maintenance purposes. They would only fully operate in the event of a disturbance or interruption in the utility's electricity supply. The limited operation of the emergency backup generators would minimize the potential fire risk from overheating and sparks as well as minimize the use and handling of the diesel fuel required to operate the emergency backup generators.

The storage and handling of diesel fuel would be conducted in compliance with safety procedures to minimize the risk of fire. Each generator unit and its integrated fuel tanks would be designed with double walls. The interstitial space between the walls of each tank would be continuously monitored electronically for the existence of liquids. This monitoring system would be electronically linked to an alarm system in the engineering office that alerts personnel if a leak is detected. Diesel fuel would be delivered on an as-needed basis in a compartmentalized tanker truck with maximum capacity of 8,500 gallons. The tanker truck would park on the access road to the south of the generator yard. The fuel hose would extend through one of multiple hinged openings in the precast screen wall surrounding the generator equipment yard.

The project would be constructed in conformance with current building and fire codes, and the SCFD would review project plans to ensure appropriate safety features are incorporated to reduce fire hazards during project operations. With implementation of all the above elements, project operation would not affect response times to the extent that new or physically altered fire facilities would be necessary. Furthermore, the few relocated workers would be within the range of projected population for the city and population assumptions assessed in the General Plan. As there no need new or physically altered fire facilities would be needed, no impact would result from project operation.

ii. Police Protection?

Construction

No Impact. The project's construction phases would not generate substantial population growth in the project area that would result in the need for additional police protection facilities for new residents. Based on the proximity of available construction workforce to the project, construction workers from neighboring cities or counties are not likely to temporarily relocate closer to the project site. However, if some workers were to permanently relocate closer to the project, it is unlikely that there would be an increase in the need for police services or an effect on service ratios to the extent that new or physically altered fire protection facilities would be necessary.

The applicant has stated that there would be fencing installed on-site during construction as part of the facility's security (GI Partners 2022e). Additionally, the SCPD would review the final site design, including proposed landscaping, access, and lighting, to ensure that the project provides adequate safety and security measures. There is potential for a relatively small, incremental increase in police protection services during construction, but they are not expected to be an increase that would require new or expanded police protection facilities to maintain acceptable service ratios, response times or other performance objectives for police protection services. As there would be no need for new or physically altered police protection facilities, no impact would result from construction.

Operation

No Impact. Because the project would be a low employment-creating use, supporting a similar amount or fewer jobs than the existing uses on the site and few operation workers who might relocate closer to the project would be unlikely to affect service ratios as a result of the project's operation. It is anticipated that there would be 33 to 35 people in the building on an average day, with 17 to 30 people in the building at the same time. Of these people, up to five would be security personnel (GI Partners 2023a). Because of the availability of an existing workforce throughout the greater Bay Area, operation workers from neighboring cities or counties are not likely to permanently relocate closer to the project site. However, if some workers were to permanently relocate closer to the project, it is unlikely that there would be an increase in the need for police services or an effect on service ratios to the extent that new or physically altered fire protection facilities would be necessary. Furthermore, the few relocated workers would be within the range of projected population for the city and population assumptions assessed in the General Plan.

The project site is currently developed with an office building that is already served by the SCPD. The BBGF and BDC would not introduce new residential or business uses that could attract a substantial number of new residents to the project area. While the project may result in an incremental increase in the need for police services associated with increased building area (though not increased employment), it would not require the construction of new police facilities or stations to maintain acceptable service ratios,

response times, or other performance objectives. Additionally, an 8-foot-high fence would be provided around the property perimeter for security purposes. As there would be no need for new or physically altered police facilities, no impact would result from operation.

iii. Schools?

Construction and Operation

No Impact. The project would be located in the Santa Clara Unified School District. Based on the proximity of the available workforce to the project, construction workers from the surrounding cities and counties are not likely to temporarily relocate closer to the project site. Based on staff's experience, construction workers who seek lodging closer to the project site do not bring their families with them. Also, these workers tend to return to their primary residence over the weekend. Therefore, construction workers who might temporarily relocated closer to the project site would not increase the need for school facilities or have an effect on service ratios to the extent that new or physically altered school facilities would be necessary.

Based on the proximity of the available operation workforce to the project, operation workers from neighboring cities or counties are not likely to permanently relocate closer to the project site. However, if some workers were to permanently relocate closer to the project, it is unlikely that there would be an increase in the need for schools or an effect on service ratios to the extent that new or physically altered school facilities would be necessary. Also, the few operations workers that might relocate closer to the project may have school age children and the few workers with school age children would be within the range of projected population for the city and population assumptions assessed in the General Plan. See **Section 4.14 Population and Housing** for more information about population growth.

The applicant would comply with all school impact fees according to BP 7211. The current school impact fee for the district is $0.78 per square foot of covered, enclosed commercial/industrial space (SCUSD 2022). These fees would be collected at the time the applicant applies for building permits from the City and are considered full mitigation, as described in the "Regulatory" subsection. As no new or physically altered school facilities would be needed, no impact would result from construction or operation.

iv. Parks?

Construction

No Impact. Based on the proximity of an available construction workforce to the project, the construction workforce would be drawn from the greater Bay Area and few workers would temporarily relocate closer to the project site. Also, based on staff's experience, workers who relocate closer to the project return to their primary residence during the weekends. However, temporary construction workers may visit park facilities before, during, or after a workday, but this would not result in many people visiting these facilities

and would be a short-term use that would cease at the end of the project's construction period. It is unlikely that there would be an increase on the usage of or demand for other public facilities to maintain acceptable service ratios or other performance objectives to the extent that new or physically altered parks would be necessary. As there would be no new or physically altered park facilities, no impact would result from construction.

Operation

No Impact. Because the project would be a low employment-creating use, supporting a similar amount or fewer jobs than the existing uses on the site, the proposed project would not generate substantial population growth in the project area that would result in the need for additional park facilities for new residents. Because of the availability of an existing workforce throughout the greater Bay Area, the project's small number of permanent employees would likely reside within commuting distance of the project site and would not need to relocate closer to the project. These permanent employees would continue to be served by existing park facilities in their local communities, and project operations would not require new park facilities to serve employee needs. As such, the project would not conflict with the City's General Plan Policy 5.9.1-P16. If some workers were to relocate permanently closer to the project, it is unlikely that there would be an increase on the usage of or demand for parks to maintain acceptable service ratios or other performance objectives to the extent that new or physically altered parks would be necessary. Furthermore, the few relocated workers would be within the range of projected population for the city and population assumptions assessed in the General Plan. As there would be no new or physically altered park facilities that would be necessary, no impact would result from construction or operation.

v. Other Public Facilities?

Construction

No Impact. Based on the proximity of the available workforce to the project, construction workers would not likely relocate closer to the project site. However, if some construction workers were to temporarily relocate, they are not likely to visit public facilities such as public libraries while working in the project area. Based on staff's experience, these workers typically return to their primary residence over the weekend. Temporary construction workers may visit public libraries before, during, or after a workday, but this would not result in many people visiting these facilities and would be a short-term use that would cease at the end of the project's construction period. It is unlikely that there would be an increase in the usage of or demand for other public facilities to maintain acceptable service ratios or other performance objectives to the extent that new or physically altered parks would be necessary. As no new or physically altered public facilities would be required, no impact would result from construction.

Operation

No Impact. The proposed project would not generate substantial population growth in the project area that would result in the need for additional public facilities or services for

new residents. The project's operations employees are anticipated to be drawn from the greater Bay Area and are not expected to relocate closer to the project site. However, if some operations workers were to relocate permanently, it would be unlikely that there would be an increase in the usage of or demand for the surrounding libraries or public facilities to the extent that new or physically altered public facilities would be necessary. Furthermore, the few relocated workers would be within both the range of projected population for the city, and the population assumptions assessed in the General Plan. As no new or physically altered public facilities would be required, no impact would result from operation.

4.15.3 Mitigation Measures

None required.

4.15.4 References

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GI Partners 2022f – GI Partners. (TN 248070). GI Partners Response to CEC Data Request Set 1 – BBGF, dated December 14, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

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SCPD 2022 – City of Santa Clara Police Department (SCPD). "Fact Sheet." Accessed April 2023. Available online at: https://www.santaclaraca.gov/our-city/departments-g-z/police-department/about-us/fact-sheet

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SCUSD 2022b – Santa Clara Unified School District (SCUSD). Santa Clara Unified School District, Schools. Accessed: November 2022. Available online at: https://www.santaclarausd.org/site/Default.aspx?PageType=1&SiteID=8&ChannelID=44&DirectoryType=6

SCUSD 2022c – Santa Clara Unified School District (SCUSD). Santa Clara Unified School District, Developer Fees. Accessed: November 2022. Available online at: https://www.santaclarausd.org/Page/53

4.16 Recreation

This section describes the environmental setting and regulatory background and discusses impacts associated with the construction and operation of the project with respect to recreation.

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental checklist established by CEQA Guidelines, Appendix G.

4.16.1 Environmental Setting

The Bowers Data Center (BDC or project) and Bowers Backup Generating Facility (BBGF), collectively called the "project", is proposed in the city of Santa Clara in Santa Clara County on property designated as Light Industrial. The 5.12-acre project site is currently developed with an approximately 55,000 square foot two-story office building and associated paved surface parking. The area surrounding the project consists primarily of commercial and industrial land uses to the north, east and west and residential uses to the southeast.

Project construction would require a temporary construction workforce and a small, permanent operational workforce. The construction workforce for the BBGF and BDC are estimated to require up to 15 workers and 125 workers per month, respectively (GI Partners 2022f). The operation workforce for the BDC would require approximately 33 to 35 people daily (GI Partners 2023a).

Recreation Facilities

The City of Santa Clara Parks and Recreation Department provides parks and recreational services in the city. The City of Santa Clara operates four community centers and 43 parks, including swim facilities and the 52-acre Central Park (Santa Clara 2022). The nearest public park to the project site is Bracher Park, approximately 0.2 mile southeast of the project site (Google Maps 2022). San Thomas Aquino Creek Trail also provides recreational opportunities in the project area and is located approximately 0.7 mile east of the project site.

Regulatory Background

Federal

No federal regulations related to recreation apply to the project.

State

No state regulations related to recreation apply to the project.

Local

City of Santa Clara 2010-2035 General Plan. The City of Santa Clara 2010-2035 General Plan (General Plan) describes goals and policies for the City to actively seek additional park and open space as residential and employment populations increase (Santa Clara 2014). The General Plan's implementation policies are designed to maintain a standard ratio of 2.4 acres of parkland per 1,000 residents. Staff identified the following applicable recreation policies in Section 5.9 of the General Plan:

- 5.9.1-P7 – Allow new parks in the general locations shown on the Land Use Diagram in all General Plan designations, except in areas designated for Light and Heavy Industrial uses.
- 5.9.1-P16 – Encourage non-residential development to contribute toward new park facilities to serve the needs of their employees.

4.16.2 Environmental Impacts

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction

Less Than Significant Impact. The city of Santa Clara is a self-identified employment hub, with approximately 70 percent of employees commuting from other cities (Santa Clara 2010). As stated in section **4.14 Population and Housing**, the anticipated construction workforce for the project would likely be drawn from the greater Bay Area. Based on the proximity of the available workforce to the project, construction workers from neighboring cities and counties are not likely to temporarily relocate closer to the project site or utilize nearby recreation facilities. If some workers were to temporarily relocate closer to the project, they would not be likely to visit parks or other recreational facilities. Based on staff's experience, these workers tend to return to their primary residence during the weekend. However, temporary construction workers may visit parks or other recreational facilities before, during, or after a workday, but this would not result in many people visiting these facilities and would be a short-term use that would cease at the end of the project's construction period. It is unlikely that there would be an increase on the usage of parks or other recreational facilities such that substantial physical deterioration of the

facility would occur or be accelerated. For these reasons, construction impacts would be less than significant.

Operation

Less Than Significant Impact. The project would be a low employment-creating use, supporting a similar amount or fewer jobs than the existing uses on the site. The project would not generate substantial population growth in the project area. Because of the availability of an existing workforce throughout the greater Bay Area, the project's small number of permanent employees would likely reside within commuting distance of the project site and would not need to relocate closer to the project. If some operation workers were to relocate, the increased use of parks or other recreational facilities would not be to such an extent that would result in substantial physical deterioration of a park or recreation facility. For these reasons, operation impacts would be less than significant.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Construction and Operation

No Impact. Recreation facilities are not included as part of the project, and the project would not require the construction or expansion of a recreation facility. As described in the City's General Plan Policy 5.9.1-P7, new park facilities are not allowed in areas designated for Light Industrial uses, which would include the project site. Construction of the project would have no impacts on a recreational facility. The few operation workers that may relocate closer to the project site would not create the need for new or expanded recreational facilities to serve them. As no new or expanded recreational facilities are needed, no impact would result.

4.16.3 Mitigation Measures

None required.

4.16.4 References

GI Partners 2022f – GI Partners. (TN 248070). GI Partners Response to CEC Data Request Set 1 – BBGF, dated December 14, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

GI Partners 2023a – GI Partners. (TN 248688). BBGF Thermal Plume Analysis DR-45, dated February 7, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

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4.17 Transportation

This section describes the environmental setting and regulatory background of the project with respect to transportation and discusses transportation impacts associated with construction and operation of the project.

TRANSPORTATION Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☒	☐	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d. Result in inadequate emergency access?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G

4.17.1 Environmental Setting

The project site is located at 2805 Bowers Avenue in the city of Santa Clara. The site is currently developed with a 55,000 square foot, two-story office building and associated paved surface parking. Numerous freeways, including U.S. Highway 101 (and Interstates 680, 280, and 880 would provide regional access to the project site. Local access to the project area is provided by Central Expressway, San Thomas Expressway, Kifer Road and Walsh Avenue. Direct access to the site is provided by Bowers Avenue by two existing driveways.

Nearby transportation infrastructure includes bike lanes, pedestrian facilities, bus transit, passenger rail, and the San José Mineta International Airport (formerly Norman Y. Mineta San Jose International Airport). The San Tomas Aquino Creek Trail (Class I bicycle facility) extends from Sunnyvale Baylands Park, north of State Route 237 to Homestead Road. Between Cabrillo Avenue and Homestead Road, the trail runs on the west side of San Tomas Expressway. The trail can be accessed by bike lanes on Scott Boulevard, Walsh Avenue, and Central Expressway (GI Partners 2022d). Class II bike lanes are located on Bowers Avenue along the project's frontage (VTA 2023a).

A continuous network of sidewalks are present along all the surrounding streets. Crosswalks with pedestrian signals are located at intersections nearby, including the Bowers Avenue and Mead Avenue intersection. The nearest bus stop is located at the Bowers Avenue and Walsh Avenue intersection, 450 feet north of the project site, along

the Santa Clara Valley Transportation Authority's (VTA) Bus Route 57. The VTA's ACE "yellow shuttle" is located 2,000 feet from the project along Bowers Avenue.

The closest VTA light rail station, the Lawrence Station, is located approximately one-mile west of the project along Lawrence Expressway. Lawrence Station is part of the regional Caltrain commuter rail system and is one of 32 stations serving the San Francisco Peninsula. From Lawrence Station, the Caltrain regional light rail connects to the local VTA light rail system at the Metro Airport Light Rail Station, which is located approximately 3.2 miles east of the project site on 1st Street. Lawrence Station is served by both the VTA Green and Blue local rail lines (VTA 2023b). The San José Mineta International Airport is located approximately 1.8 miles southeast of the project site and has two runways that exceed 3,200 feet in length (AirNav 2023). Flight tracks do not pass directly over the project site (Santa Clara County 2016).

Regulatory Background

Federal

Code of Federal Regulations (Title 14, Part 77.9 [a]). This regulation requires Federal Aviation Administration (FAA) notification for construction or alterations within 20,000 feet of an airport with a runway more than 3,200 feet in length if the height of the construction or alteration exceeds a slope of 100 to 1 extending outward and upward from the nearest point of the nearest runway of the airport (CFR 2020a). The threshold for the FAA notification 100 to 1 surface exceedance height is approximately 95 feet at the project site. If a project's height, including any temporary equipment (such as cranes used during construction) or any ancillary structures (such as transmission poles), exceeds the 100 to 1 surface, the project applicant must submit a copy of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA.

The project's mechanical equipment screen on the roof top of the data center building would exceed the FAA notification 100 to 1 surface height of 95 feet by approximately eight feet. The project owner has submitted a FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA for review and to receive a hazard determination to ensure the project structure would not create a hazard to aircraft.

State

California Department of Transportation. Project construction activities that require movement of oversized or excessive load vehicles on state roadways require a transportation permit issued by the California Department of Transportation (Caltrans). Caltrans may also require the applicant to prepare a Transportation Management Plan prior to construction to reduce effects on the state transportation network (Caltrans 2019).

Local

Bay Area Air Quality Management District Greenhouse Gas Thresholds for Land

Use Projects. On April 20, 2022, the Bay Area Air Quality Management District Board of Directors held a public meeting and adopted updated California Environmental Quality Act (CEQA) Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. For transportation, land use projects must 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 (Chapter 386, Statutes of 2013) VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA. For office projects, the project generated VMT must be 15 percent below the existing VMT per employee. In addition, the project must achieve compliance with off street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2[1] (CALGreen 2023). A discussion of the project's generated VMT is located in the "Environmental Impacts" subsection below.

Santa Clara County Airport Land Use Commission's Comprehensive Land Use Plan for San José Mineta International Airport. The San José Mineta International Airport is located 1.8 miles southeast of the site. The project site is not within the airport's area of influence or within noise hazard areas identified in the Santa Clara County Airport Land Use Commission's Comprehensive Land Use Plan (CLUP) (Santa Clara County 2016). Figure 6 of the CLUP identifies the Federal Aviation Regulations (FAR) Part 77 surfaces above the project site. FAR Part 77 surfaces are those identified by the FAA as obstruction surfaces around an airport. Exceedance of these surfaces could result in obstruction of airspace and hazards to aircraft entering or exiting the San José Mineta International Airport. At the project site, the FAR Part 77 surface shown on Figure 6 of the CLUP is at 212 feet above mean sea level (AMSL); meaning any structures at the site exceeding 212 feet AMSL could pose a safety hazard (Santa Clara County 2016).

City of Santa Clara 2010-2035 General Plan. The *City of Santa Clara 2010-2035 General Plan* (General Plan) includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects within the city. While a number of General Plan policies pertain to City of Santa Clara (City) efforts to enhance the overall multimodal transportation system, the following policies are specific to new development and are assumed applicable to the proposed project (Santa Clara 2010):

- Policy 5.8.3-P8: Require new development to include transit stop amenities, such as pedestrian pathways to stops, benches, traveler information and shelters.
- Policy 5.8.3-P9: Require new development to incorporate reduced onsite parking and provide enhanced amenities, such as pedestrian links, benches and lighting, in order to encourage transit use and increase access to transit services.

1 CALGreen is the California Green Building Standards Code—Part 11, Title 24, California Code of Regulations

- Policy 5.8.4-P7: Require new development to provide sidewalks, street trees and lighting on both sides of all streets in accordance with City standards, including new developments in employment areas.
- Policy 5.8.5-P1: Require new development and City employees to implement transportation demand management programs that can include site-design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage and recreational facilities.
- Policy 5.8.5-P3: Encourage all new development to provide on-site bicycle facilities and pedestrian circulation.
- Policy 5.8.5-P4: Encourage new development to participate in shuttle programs to access local transit services within the city, including buses, light rail, Bay Area Rapid Transit, Caltrain, Altamont Commuter Express Yellow Shuttle and Lawrence Caltrain Bowers/Walsh Shuttle services.

City of Santa Clara, Transportation Analysis Policy. The City approved a revised Transportation Analysis Policy (TAP) on June 23, 2020. This policy establishes requirements for evaluating transportation environmental impacts by measuring VMT per the CEQA and establishes level of service (LOS) as an operational measure of intersection efficiency, which is not defined as transportation environmental impact per CEQA. The City uses the Santa Clara County Average VMT as the established environmental baseline. To evaluate whether a proposed project would have a significant impact under CEQA, the City compares the project's VMT with this baseline. Industrial projects would have a less than significant impact if it results in a 15% VMT reduction (14.14), compared to the baseline. The TAP also formalizes Transportation Operational Analysis requirements that occur outside of CEQA. All proposed projects are required to undergo environmental review as part of the City's approval process. This includes an analysis of CEQA impacts (VMT) and non-CEQA operational measures of intersection efficiency (LOS) (Santa Clara 2020).

4.17.2 Environmental Impacts

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Construction

Less Than Significant Impact. Construction of the project would not significantly obstruct any transit, roadway, bicycle, or pedestrian facilities in the area. Construction activities would occur mostly onsite and not in the public right-of-way with the exceptions of several water connections (domestic, recycled, fire, and irrigation), storm drain, sanitary sewer, and fiber optic cable connections along Bowers Avenue. In addition, an existing recycled water line would be extended along Bowers Avenue from Walsh Avenue to the site, for secondary water needs. While construction activities located in the public right-of-way

would require temporary lane blockages or closures on Bowers Avenue and Walsh Avenue during daytime hours, it would not interfere with a designated bike lane or transit route, as Bowers Avenue and Walsh Avenue have four travel lanes. Temporary construction associated with connecting the project site to the existing utility connections and extension of the recycled water line is not anticipated to disrupt more than one travel lane at a time. This would ensure at least one travel lane remains open in each direction. Project construction would not otherwise temporarily or permanently alter any public roadways or intersections.

Additionally, as part of the project, the project owner would construct new 9-foot-wide sidewalks along the project frontage on Bowers Avenue and improve the curb ramp at the southeast corner of the Bowers Avenue and Mead Avenue intersection to comply with Americans with Disabilities Act (ADA) standards. The sidewalks and ADA curb ramp would facilitate pedestrian movements between the project site and nearby bus stops. Within the site, a pedestrian walkway would be provided for access to the sidewalks on Bowers Avenue, the surface parking lot, and the building entrances. Sidewalks would also be provided around the data center building and substation. Lastly, the project would provide a total of 62 parking spaces on site[2] as well as a secure bike storage room at the northwest edge of the building near the northern entrance. The bike storage room would be accessed using the pedestrian walkway from Bowers Avenue. The project would also provide bike racks next to the building entrance facing Bowers Avenue (GI Partners 2022d). Therefore, pedestrian and bicycle access to all proposed facilities within the project site would be provided which would encourage employees to use alternative transportation modes.

The City, as the permitting agency, would ensure the project applicant obtains the proper encroachment permit to minimize disruption to Bowers Avenue and Walsh Avenue during construction. Furthermore, the City, as the permitting agency, would require the applicant obtain required permits from Caltrans for the movement of oversized or excessive load vehicles on state roadways, prior to construction, to reduce effects on the state transportation network. The permitting process ensures that all applicable requirements are complied with during project construction.

The project would be consistent with the General Plan circulation policies (discussed under the "Regulatory Background" subsection) which are intended to improve multimodal accessibility between land uses and to facilitate the use of non-vehicular travel. Therefore, the construction of the project would not conflict with any program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and would, therefore, have less than significant impacts.

2 Total parking for the project includes three ADA accessible parking spaces, four electric vehicle parking spaces, and six clean air vehicle parking spaces.

Operation

Less Than Significant Impact. Operation of the project would occur fully onsite and would not obstruct pedestrian, bike, or transit facilities. The project would not interfere with any future pedestrian, bike, or transit plans for the area.

The project would be consistent with General Plan policies discussed under the "Regulatory Background" subsection, which requires new development provide pedestrian improvements and implement transportation demand management (TDM) programs to reduce vehicle trips. These policies are intended to improve multimodal accessibility between land uses and facilitate the use of non-vehicular travel. The project owner, in accordance with these policies, would construct new sidewalks along the project frontage, improve a curb ramp, and would implement a TDM program to reduce the number of vehicle trips generated by the project. Thus, the project would be consistent with these policies.

Operation of the project would not conflict with any program, plan, ordinance, or policy addressing the circulation system, and would therefore result in less than significant impacts.

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

CEQA Guidelines section 15064.3, subdivision (b), states that generally VMT is the most appropriate measure of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a project. Increased VMT exceeding an applicable threshold could constitute a significant impact. If existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project's VMT qualitatively, evaluating factors such as the availability of transit or proximity to other destinations.

Construction

Less Than Significant Impact. For construction trips, a qualitative analysis of VMT impacts (instead of a more detailed quantitative analysis) is often appropriate (CNRA 2018; see also CEQA Guidelines section 15064.3, subdivision (b)(3)).

The City's TAP establishes thresholds of significance for development projects. Thresholds of significance are applied based on the development type (e.g. employment, industrial, residential, etc.). Currently there is not a designated threshold or measurement criteria used to calculate VMT construction impacts. As discussed above, the Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA, recommends a qualitative analysis of VMT impacts for construction traffic. In addition, construction workers are expected to commute locally from the greater Bay Area. The San José-Sunnyvale-Santa Clara Metropolitan Statistical Area (MSA) that serves Santa Clara and San Benito counties has a sufficient local construction workforce to accommodate the project, as described in **Section 4.14 Population and Housing**.

Thus, the construction workforce for the project would commute locally rather than demanding construction workers from MSAs that are further away (e.g., Sacramento-Roseville-Folsom MSA). The paragraphs below describe the construction activities that are expected to occur during the project's construction timeline.

Project construction would involve a temporary increase in vehicle trips resulting from workers commuting to the project site and the delivery and hauling of project materials. Preparation of the site would require the demolition of the existing building, grading, and removal of approximately 16,000 cubic yards of soil (GI Partners 2022e). No off-site staging or laydown areas are proposed, as construction staging would occur on site. Typical activities related to the construction of any development could include temporary lane narrowing, lane closures, sidewalk and pedestrian crosswalk closures, and bike lane closures. In the event of any type of closure, clear signage (closure and detour signs) would be provided to ensure vehicles, pedestrians, and bicyclists are able to adequately reach their intended destinations safely.

During the 24-month construction timeline, the average construction workforce is estimated to be 100 workers and reach a peak workforce 125 workers. Like other recent data center projects, the daily trip rates for employees at a general light industrial facility were used to estimate construction worker trips. The Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, has a trip generation rate for general light industrial land uses (land use code 110) of 3.05 daily one-way trips per employee (ITE 2022).

Based on the construction details provided above, project construction is estimated to generate an average of 305 (i.e., 3.05 daily one-way trips X 100 workers = 305) daily one-way worker commute trips. The peak construction interval is estimated to generate a maximum of 381 (i.e., 3.05 daily one-way trips X 125 workers = 381) daily one-way worker commute trips. Many of the construction worker trips would be expected to occur prior to the morning and evening peak traffic hours in the Santa Clara region, in accordance with typical construction schedules. Based on past data center projects, it is estimated that the removal of cut and fill and the delivery of equipment and materials would average approximately five trips per day and would be scheduled for off-peak traffic hours when possible. See **Table 4.17-1. Construction Trip Generation** below for details.

TABLE 4.17-1 CONSTRUCION TRIP GENERATION

Trip Type	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Delivery/Haul Trucks	--/5		--/5		--/5	--/5
Construction Workers (Maximum/Average)	381/305		381/305		381/305	381/305
Total Construction Traffic	--	--	386/310	--	--	386/310

Source: ITE 2022

Upon the completion of construction, all temporary worker commute trips and truck trips would cease. As such, project-related construction trips would not result in a substantial or sustained increase in VMT compared to Santa Clara County average VMT. Further, construction trips would not result in temporary emissions increases at levels that could obstruct the implementation of plans and policies related to the reduction of greenhouse gas emissions by reducing VMT. Refer to **Section 4.3 Air Quality** for information related to exhaust emissions during construction. For these reasons, project construction would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). VMT impacts from project construction would be less than significant.

Operation

Less Than Significant with Mitigation Incorporated. The Santa Clara VTA in conjunction with Santa Clara County and the cities in the county developed the Santa Clara Countywide VMT Evaluation Tool. This tool allows local government staff, consultants, and project developers to measure VMT for land use projects within Santa Clara County. Since the VMT evaluation tool does not explicitly include data centers, the proposed data center space was converted to an equivalent amount of industrial square footage (see Table 4.17-2 Equivalent Industrial Space). The project was then evaluated as industrial development in the VMT evaluation tool to obtain the project generated VMT. This is a reasonable approach to the VMT analysis since the trip-making characteristics of a data center would be similar to industrial development. Based on this tool, the target VMT for the project is 15 percent below the county average of 16.64 VMT, which results in project-related commute trips needing to be no more than 14.14 daily vehicle miles per worker (GI Partners 2022d).

Table 4.17-2 EQUIVALENT INDUSTRIAL SPACE

Land Use	ITE Land Use	Size	Daily Trips[3]	
			Trip Rate	Trips
Proposed Land Use				
Data Center	Land Use Code 160	244,068 s.f.	0.99 per 1,000 s.f.	242
Equivalent Land Use				
General Light Industrial	Land Use Code 110	49,692 s.f.	4.87 per 1,000 s.f.	242

All trip rates are from the ITE Trip Generation Manual, 11th Edition, 2022 (GI Partners 2022d).

Table 4.17-3 VTA VMT ESTIMATION

VMT Threshold and Scenario	VMT Per Worker	
Santa Clara County Average VMT	16.64	*Exceed 14.14 VMT Threshold?*
Project Threshold: 15% Below County Average	14.14	
Estimated Project VMT (before **TRANS-1**)	15.70	*YES*

3 Please note operational trips would be less than the 242 trips estimated using the ITE rate. Actual trips generated by the project would include 35 daily employees who would travel to and from the project site, periodic trips by a tanker truck to supply diesel fuel for the backup generators on an as-needed basis, visits from customers setting up or maintaining equipment, and the delivery and trash-hauling trucks at the building throughout the day (GI Partners 2023c).

Estimated Project VMT (with **TRANS-1**)	14.09	*NO*

Source: (GI Partners 2022d)

The results of the VMT evaluation indicate that the VMT generated by the project would be 15.70 VMT, which exceeds the industrial VMT threshold of 14.14 VMT per employee. Therefore, the project would result in a significant impact on the transportation system based on the City's VMT impact criteria.

The applicant proposed a mitigation measure to reduce potential impacts to the transportation system (PD TRN-1.1). Staff evaluated this mitigation measure in the context of the potential impacts and concludes that the mitigation measure is sufficient. Staff proposes mitigation measure **TRANS-1** which outlines the implementation of TDMs to reduce project generated VMT to a level below the City's industrial VMT threshold. With the implementation of **TRANS-1**, the project would include the TDM measures described below to reduce project generated VMT (15.70) below 14.14, and impacts would be reduced to a less than significant level.

1. Commute Trip Reduction Marketing and Education – Commute trip reduction marketing and education encourages employees to use transit, shared rides, and active modes of transportation, thus lowering the number of single occupancy vehicle trips.
2. Alternative Transportation Benefits – Alternative transportation benefits provide employees financial subsidies or pre-tax deductions for transit, carpooling, and vanpooling activities. This strategy encourages employees to use alternative transportation modes.
3. Ride-Sharing Program – Implementation of a ride-sharing program encourages employees to carpool with coworkers and through ride matching services, which help employees find other commuters traveling in the same direction.

The VMT estimate assumes that 100 percent of the employees would participate in the commute trip reduction marketing/education program, 10 percent of the employees would be eligible for alternative transportation benefits, and 4 percent of the employees would participate in the ride-sharing program. The project owner would be required to implement a TDM program with these TDM measures to reduce the project VMT. Furthermore, the City of Santa Clara requires a TDM annual report, which allows the City to monitor the effectiveness of the mitigation measure.

Lastly, the City, as the permitting agency for the project, would ensure project consistency with the General Plan policies related to trip reduction, transit connectivity, and alternative modes of transportation (as provided in Section 4.17.1, Local Regulatory Background) as well as consistency with applicable CALGreen Tier 2 requirements. Therefore, with implementation of **TRANS-1**, the project would have a less than significant impact on VMT.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction

Less Than Significant Impact. As discussed under question "a" above, project construction would include interconnection to water connections, storm drain, sanitary sewer, and fiber optic cables along Bowers Avenue. In addition, an existing recycled water line would be extended along Walsh Avenue and Bowers Avenue to the site for secondary water needs. While this construction would require temporary lane blockages or closures on Bowers Avenue and Walsh Avenue during daytime hours, both streets have four travel lanes. The temporary construction associated with connecting the project site to the existing buried recycled water line is not anticipated to disrupt more than one travel lane at a time. This would ensure at least one travel lane remains open in each direction. Project construction would not otherwise temporarily or permanently alter any public roadways or intersections that could result in roadway hazards.

The City, as the permitting agency, would ensure the project applicant obtains the proper encroachment permit to minimize disruption to Bowers Avenue and Walsh Avenue during construction. As part of this permit, the City may require the applicant to ensure temporary lane closures and traffic control measures occur according to standard guidelines outlined in the Manual on Uniform Traffic Control Devices, the Standard Specifications for Public Works Construction, and the California Joint Utility Traffic Control Manual. Lastly, the City would require the applicant to obtain any required permits from Caltrans for the movement of oversized or excessive load vehicles on state roadways prior to construction to reduce effects on the state transportation network, as discussed under the "Regulatory Background" subsection. These actions would reduce any hazards from construction activities affecting roadways and from transporting materials to and from the site. Therefore, the project would not substantially increase roadway hazards and the impact would be less than significant.

As discussed under the "Regulatory Background" subsection, under federal law, 14 CFR § 77.5 et. seq, the height threshold for FAA notification is 95 feet above ground level (AGL) at the project site. Project construction is expected to require a crane for placement of each chiller on the proposed structure roof. The building height is estimated to be 87.5-feet AGL (GI Partners 2022e). Therefore, the crane boom would exceed 95 feet in height for placement of roof-top chillers. This requires the project applicant to submit Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA. It should be noted, the FAA generally grants a Determination of No Hazard for temporary construction equipment. The City, as the permitting agency for the project, would ensure consistency with this federal regulation and compliance with any of the FAA's conditions to reduce potential airspace hazards. For these reasons, project construction would not increase hazards from an incompatible use and impacts would be less than significant.

Operation

Less Than Significant Impact.

Access. The existing curb and geometric design for vehicle access to the site would remain in its current locations. For vehicle access, vehicles would enter the site from the two gated entrances located at the northern and the southern driveways. As these driveways would be identical to the existing vehicle ingress and egress points of the site, the operation of the project would not increase surface transportation hazards.

Structure Height. The project is located approximately 1.8 miles west of the San José Mineta International Airport. Tall structures can potentially pose a hazard to occupants of aircraft, depending on the heights of structures and their proximity to air traffic. The highest point of the proposed project, the mechanical equipment screen on the roof, would be approximately 103-feet AGL (GI Partners 2022e). The project's maximum structure height of 103-feet would exceed the FAA's obstruction surface of 95 feet at the project site. As a result, the project applicant has prepared and submitted FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA for review (GI Partners 2023c). The results of the FAA determination will be filed to the project's website docket once completed. The City, as the permitting agency for the project, would ensure compliance with any of the FAA's conditions to reduce potential airspace hazards.

Thermal Plumes. The project's emergency natural gas generators and chillers would discharge thermal plumes, high-velocity columns of hot air, during operation. Thermal plume velocities would be greatest at discharge points, with plume velocities decreasing with increasing altitude. Plume velocities would also be highest during certain weather conditions, such as cool temperatures and calm winds. High-velocity thermal plumes have the potential to affect aviation safety, and the FAA Aeronautical Information Manual identifies thermal plumes as potential flight hazards (FAA 2022), though it should be noted that while the FAA regulates the heights of physical structures, it does not regulate plumes. Aircraft flying through thermal plumes may experience significant air disturbances, such as turbulence and vertical shear. The FAA manual advises that, when able, a pilot should fly upwind of smokestacks and cooling towers to avoid encountering thermal plumes.

The California Energy Commission (CEC) staff uses a peak vertical plume velocity of 10.6 meters per second (m/s) (5.3 m/s average plume velocity) as a screening threshold for potential impacts to aviation. Based on a literature search, this velocity generally defines the point at which aircraft begin to experience severe turbulence. To determine whether the project's thermal plume would exceed 10.6 m/s peak velocity at altitudes where aircraft would fly, the project applicant performed a thermal plume assessment of the emergency diesel-fired generators and rooftop chillers. The applicant's analysis was independently reviewed and accepted by the CEC Air Quality staff. Thermal plumes from these two features are discussed below.

The thermal plume assessment calculated that under worst-case weather conditions, calculation methods, and operating scenarios[4], the highest vertical velocity of plumes would be from the rooftop chillers. The vertical velocity of plumes from the chillers would not drop below 5.3 m/s until reaching an altitude of 158 feet AGL. The vertical velocity of plumes from the emergency diesel-fired generators would not drop below 5.3 m/s until reaching an altitude of 89 feet AGL.

Furthermore, the existing project site elevation ranges from approximately 44 feet to 48 feet above mean sea level (GI Partners 2022e). Considering the most conservative site elevation of 48 feet AMSL, the project's thermal plumes from the rooftop chillers would not drop below 5.3 m/s until reaching an altitude of 206 feet AMSL and the thermal plumes from the emergency generators would not drop below 5.3 m/s until reaching an altitude of 137 feet AMSL. Therefore, the high velocity portion of the worst-case plume produced by the chillers and generators would not encroach into the FAA obstruction surface (shown in Figure 6 of the CLUP) of 212 feet AMSL at the project site.

In addition, aircraft would not be expected to be flying low enough over the project site to encounter potentially hazardous thermal plumes produced by the project's emergency diesel-fired generators and chillers. Title 14, Section 91.119 of the Code of Federal Regulations states that unless necessary for takeoff or landing, the minimum safe altitudes for aircraft are 500 feet AGL for non-congested areas and 1,000 feet AGL for congested areas, such as the area around the project site (CFR 2020b). Lastly, according to Aircraft Flight Tracks Figure 3a and 3b in the Santa Clara County CLUP for the San José Mineta International Airport, aircraft departing and arriving at the airport do not pass directly over the site. As a result, impacts to aircraft from thermal plumes are expected to be less than significant.

As discussed above, the project would not result in hazards to aircraft from either a geometric design feature, such as structure height, or incompatible uses, including land uses or thermal plumes. The project would not increase any other hazards. For these reasons, impacts would be less than significant.

d. Result in inadequate emergency access?

Construction

Less Than Significant Impact. As discussed under criterion "a", above, project construction would include the construction of several water connections (domestic, recycled, fire and irrigation), storm drain, sanitary sewer, and fiber optic cable connections along Bowers Avenue and the extension of an existing recycled water line along Bowers Avenue and Walsh Avenue for secondary water needs. While these construction activities would require temporary lane blockages or closures on Bowers

4 Worst-case scenarios are based on very light-wind, near-neutral atmospheric conditions with maximum loading (GI Partners 2023a).

Avenue and Walsh Avenue during daytime hours, temporary construction associated with connecting the project site to utility services is not anticipated to disrupt more than one travel lane at a time. Project construction would not otherwise temporarily or permanently alter any public roadways or intersections that could result in inadequate emergency access.

The City, as the permitting agency, would ensure the project applicant obtains the proper encroachment permit to minimize disruption to Bowers Avenue and Walsh Avenue during construction. As part of the permit, the Citymay require the applicant to ensure temporary lane closures and traffic control measures occur according to standard guidelines outlined in the Manual on Uniform Traffic Control Devices, the Standard Specifications for Public Works Construction, and the California Joint Utility Traffic Control Manual. This would ensure emergency vehicle travel on these roads and access to adjacent buildings is not disrupted during the construction of the project. Therefore, the impact would be less than significant.

Operation

Less Than Significant Impact. Emergency vehicle access to and from the data center would be provided by two gated driveways on Bowers Avenue in the same location as the existing driveways: one right-turn only driveway near the northern boundary of the site (northern driveway) and a full-access driveway at the signalized Bowers Avenue and Mead Avenue intersection (main driveway). The drive aisle within the site would provide emergency vehicle access to all sides of the building.

In addition, the project site plan was reviewed for truck access using truck turning-movement templates for the California legal truck types of WB-40 and SU-30, which represent small semi-trailer trucks, emergency vehicles, garbage trucks, and small to medium delivery vehicles. According to the project transportation analysis, larger trucks would enter the site via the northern driveway, back into the loading area, and exit using the main driveway. Large trucks accessing the driveways may encroach into the inner northbound lane on Bowers Avenue. However, because large trucks would typically be infrequent and would access the site during off-peak hours, they are not expected to cause disruption to the traffic flow on Bowers Avenue (GI Partners 2022d).

Lastly, the minimum acceptable sight distance at the driveways is calculated according to the Caltrans recommended stopping sight distance. Sight distance requirements vary depending on roadway speeds. The speed limit on Bowers Avenue is 35 miles-per-hour, and the recommended Caltrans stopping sight distance for 35 miles-per-hour roadways is 250 feet. Thus, a driver must be able to see 250 feet looking left out of the driveways to locate a sufficient gap to turn out of the driveways (Caltrans 2018). Bowers Avenue is slightly curved along the project frontage, but the curves would not obstruct the view for exiting vehicles. The site plan shows the landscaping along the project frontage would not obstruct the view of drivers exiting the project driveways. Bowers Avenue does not allow on-street parking; therefore, sight distance would be adequate at the driveways.

The City, as the permitting agency, would ensure driveways providing truck access to the project site are designed to accommodate the wider turn radii required for larger vehicles and adhere to the City's design guidelines. The City, as the permitting agency, would also ensure all applicable Caltrans driveway design standards are adhered to. Lastly, the project would not physically block any access roads or result in traffic congestion that could significantly compromise timely access to this facility or any other location during construction and operation. Therefore, the impact would be less than significant.

4.17.3 Mitigation Measures

TRANS-1: The project shall implement a Transportation Demand Management (TDM) program sufficient to demonstrate that vehicle miles travelled (VMT) associated with the project would be reduced to 14.14 or less per employee. The TDM program shall include, but is not limited to, the following measures, which have been determined to be a feasible method for achieving the required VMT reduction:

1. Commute Trip Reduction Marketing and Education. This TDM measure shall educate and encourage employees to use transit, shared rides, and active modes of transportation to lower the number of single occupancy vehicle trips.
2. Alternative Transportation Benefits. This TDM measure shall provide general commuter benefits to employees, which would include financial subsidies or pre-tax deductions for transit, carpooling, and vanpooling activities to encourage employees to use alternative transportation modes.
3. Ride-Sharing Program. This TDM measure shall encourage employees to carpool with other employees and through ride matching services to ensure employees are connected with other commuters traveling in the same direction.

Prior to the issuance of an occupancy permit, the TDM program shall be submitted and approved by the City of Santa Clara Director of Community Development and shall be monitored annually to gauge its effectiveness in meeting the required VMT reduction. The TDM program shall establish an appropriate estimate of initial vehicle trips generated by the occupant of the proposed project and shall include the conducting of driveway traffic counts annually to measure peak-hour entering and exiting vehicle volumes. The volumes shall be compared to trip thresholds established in the TDM program to determine whether the required reduction in vehicle trips is being met. The results of annual vehicle counts shall be reported in writing to the Director of Community Development.

If TDM program monitoring results show that the trip reduction targets are not being met, the TDM program shall be updated to identify replacement and/or additional feasible TDM measures to be implemented. The updated TDM program shall be subject to the same approvals and monitoring requirements listed above.

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4.18 Utilities and Service Systems

This section describes the environmental and regulatory setting and discusses impacts associated with the construction and operation of the project specific to utilities and service systems.

UTILITIES AND SERVICE SYSTEMS Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

4.18.1 Environmental Setting

The proposed Bowers Backup Generating Facility (BBGF) project would consist of 32 diesel-fired generators (8 redundant) and would serve as the backup power component of the proposed Bowers Data Center (BDC). The BBGF would have a maximum electrical demand of 72 megawatt (MW), or 631,152 MW hours (MWh) per year providing backup generation for the BDC. Electrical service would be provided by Santa Clara County's Silicon Valley Power (SVP). The overall BDC project would be constructed on a previously disturbed, fully developed commercial site. Prior to the 1980s the project site was cultivated for agriculture.

Potable Water Supply

The City of Santa Clara (City) provides potable water to over 131,655 customers over an 18.4 square mile area. Potable water for the City's service area is supplied by both

imported surface water from the San Francisco Public Utilities Commission (SFPUC) and groundwater locally produced by the City from the Santa Clara Valley subbasin. The Santa Clara Urban Water Management Plan (UWMP) states that the Santa Clara Valley subbasin is managed by the Santa Clara Valley Water District (SCVWD), the local Groundwater Sustainability Agency (Santa Clara 2021). According to the SCVWD's 2021 Groundwater Management Plan, the California Department of Water Resources has identified the Santa Clara Valley subbasin as a medium-priority groundwater basin that is not in critical overdraft condition (SCVWD 2021).

The estimated water demand for the BDC would be approximately 1.75 acre-feet (AF) of potable water during 24 months of construction and approximately 2 acre-feet per year (AFY) during operations (1 AFY for landscaping). Historically potable water use of the commercial builds at the project site has been 3.2 AFY. According to the UWMP, the City would have a water deficit in a multiple dry-year scenario assuming supply from SFPUC would be interrupted. Under this scenario, the City's supply from SFPUC might be suspended if certain conditions specified in the interruptible contract between the City and SFPUC are satisfied (Santa Clara 2021). If SFPUC water supply is suspended, the City would have to replace the demand using groundwater or water supplied by SCVWD.

Recycled Water Supply

Recycled water is supplied to the City through the South Bay Water Recycling (SBWR) program. The SBWR obtains advanced tertiary treated water from the San Jose-Santa Clara Regional Wastewater Facility (RWF), formerly known as the San Jose/Santa Clara Water Pollution Control Plant. The RWF is located approximately 4.4 miles northeast of the project site.

The California Water Code sections 13550 and 13551 include language prohibiting the use of potable water where recycled water can be used, if recycled water is available and economically feasible. The BDC project would include extending the recycled water line from the intersection of Walsh Avenue and Northwestern Parkway, 2,600 feet along Walsh Avenue to the subject site. Recycled water would supply an estimated 0.5 AFY for the adiabatic cooling system on the rooftop air-cooled chillers.

Wastewater Service

The City of Santa Clara Departments of Public Works and Water and Sewer Utilities are responsible for the wastewater collection system. Wastewater is collected by City's sewer systems and is conveyed by pipelines to the RWF. Located in Alviso, the RWF is owned jointly by the cities of San Jose and Santa Clara and is operated by the City of San Jose's Department of Environmental Services. The RWF has the capacity to treat 167 million gallons per day (mgd) of wastewater and currently treats an average of 110 mgd, thus it has 57 mgd, or 34 percent of available capacity. RWF's effluent undergoes advanced tertiary treatment to meet Title 22 recycled water standards, after which approximately 20 percent flows to SBWR's adjacent pump station to be distributed to customers in the area. The remaining 80 percent of the tertiary treated water flows into San Francisco Bay (San Jose 2022). The RWF's current Wastewater Discharge Requirements (WDRs) were

issued by the San Francisco Regional Water Quality Control Board (RWQCB) in September 2014. Wastewater from the BDC project site currently enters the City's sanitary system by means of a pipeline along Bowers Avenue.

Storm Sewer Service

The project would be constructed in the city of Santa Clara, within the San Thomas Aquino watershed. The City owns and maintains the municipal storm drainage system in the vicinity of the project site. The project site is served by a 42-inch storm main along Bowers Avenue. Storm water runoff from the project site empties into the City's storm-drain pipeline that discharges into San Thomas Creek which drains into the San Francisco Bay, located approximately 6.5 miles northwest of the proposed project site.

Solid Waste

Solid waste collection service in the city of San Clara is provided by Mission Trail Waste System (Mission Trail) through a contract with the City. Mission Trail is also contracted with the City to collect yard waste to support Santa Clara's recycling program. Other solid waste services are provided by Steven's Creek Disposal and recycling. All waste is sorted locally at the Newby Island Resource Recovery Park. After sorting, recyclable materials are captured for reuse, diverting them from the landfill. Organic material is taken to a Zero-Waste Energy Development facility, where it is put through an anaerobic digestion process, ultimately producing electricity and compost.

On December 7, 2016, the City of San Jose approved the expansion of the Newby Island Landfill by raising the height of the existing landfill by 95 feet, thereby increasing landfill capacity by 15.12 million cubic yards (San Jose 2016). According to CalRecycle, as of January 31, 2020, Newby Island Landfill is permitted to accept a maximum of 4,000 tons of solid waste per day, has a remaining disposal capacity of 16.4 million cubic yards, and is permitted to operate through 2041 (CalRecycle 2020).

Based on estimates using default solid waste disposal rates for a general office building scenario, the businesses at the project site currently produce 51.15 tons of solid waste per year or 280 pounds of solid waste per day (CAPCOA 2016).

Electric Power, Natural Gas, and Telecommunications

Electricity needed for project operation would be provided by SVP, the City's energy utility.

Telecommunication services in the project area are provided by several fiber optics providers, such as CenturyLink, Zayo, AT&T, and others. The applicant notes that the project lies within an urban area already served by existing telecommunication infrastructure.

Natural gas service in the project area is provided by Pacific Gas and Electric Company (PG&E) which owns natural gas distribution facilities within the city of Santa Clara; however, the proposed project would not utilize natural gas.

Regulatory Background

Federal

Clean Water Act and California's Porter-Cologne Water Quality Control Act. The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) are responsible for the regulation and enforcement of water quality protection requirements of the federal Clean Water Act (CWA) and the state's Porter-Cologne Water Quality Control Act (Porter-Cologne). The National Pollutant Discharge Elimination System (NPDES) is the permitting program that allows point source dischargers to comply with the CWA and Porter-Cologne laws. This regulatory framework protects the environment and beneficial uses of the state's surface and groundwater resources for public benefit. Water quality protection for the proposed project would be achieved by complying with applicable NPDES permits from the SWRCB or the San Francisco Bay RWQCB. The RWF complies with the Clean Water Act through its current NPDES WDRs, which were issued by the San Francisco RWQCB in September 2014.

Under Section 303(d) of the CWA, states are obligated to identify impaired surface water bodies and develop total maximum daily load (TMDL) requirements for contaminants of concern. The TMDL is the quantity of a pollutant that can be assimilated by a water body without violating water quality standards. Listing a water body as impaired does not necessarily suggest that the water body cannot support beneficial uses; rather, the intent is to identify the water body as requiring the future development of a TMDL to maintain water quality and reduce the potential for future water quality degradation. Guadalupe River, west of the project site, is currently listed on the United States Environmental Protection Agency's Section 303(d) Listed Waters for California for diazinon, mercury, and trash.

The San Francisco Bay RWQCB issued a Municipal Regional Storm Water NPDES Permit (Permit Number CAS612008) that requires the City of San Clara to implement a storm water quality protection program. This regional permit applies to 77 Bay Area municipalities, including the City of San Clara. Under the provisions of the Municipal NPDES Permit, redevelopment projects that disturb more than 10,000 square feet are required to design and construct storm water treatment controls to treat post-construction runoff. The permit requires the post-construction runoff from qualifying projects to be treated by using low-impact development treatment controls, such as biotreatment facilities.

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) assists co-permittees within the Santa Clara Valley area to implement the provisions of the Municipal NPDES Permit. In addition to water quality controls, the Municipal NPDES Permit requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff, where such hydromodification is likely to cause increased erosion, silt pollutant generation, or other impacts to beneficial uses of local streams. Projects may be deemed exempt from the permit requirements under one of the following three conditions (SCVURPPP 2005);

1) Project will not increase the potential for erosion or other non-beneficial impacts,
2) The Project drains into a hardened channel or tidally influenced area, and
3) Project lies within a watershed that is over 90% developed or with greater than 65 percent impervious surface.

The project site is located in an area that drains into a hardened channel or tidally influenced area (SCVURPPP 2010); thus, the project site is not subject to the SCVURPPP hydromodification requirements.

State

California Water Code, Sections 10910-10915. California Water Code, sections 10910-10915, requires water service providers to evaluate stresses to the water supply service system caused by proposed project developments. The code sections require public water systems to prepare water supply assessments (WSA) for certain defined development projects subject to the California Environmental Quality Act (CEQA).

According to section 10912, if a "Project" meets any of the following criteria, then a detailed WSA would be required to be prepared by the water supplier:

a) A proposed residential development of more than 500 dwelling units.
b) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
c) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
d) A proposed hotel or motel, or both, having more than 500 rooms.
e) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
f) A mixed-use project that includes one or more of the projects specified in this subdivision.
g) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Further guidance for how to interpret these sections of the Water Code is provided in a California Department of Water Resources document titled "*Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001*" (Guidebook) (DWR 2003). A helpful interpretive section on page 3 of the Guidebook explains how to interpret item (g) above. It states that one dwelling unit typically consumes 0.3 to 0.5 AF of water per year and 500 dwelling units would result in 150 to 250 AFY of potable water (DWR 2003). The Guidebook also emphasizes that WSAs are necessary for areas with a poorly understood water supply, or where the project would increase the demand substantially, or 10 percent (DWR 2003). The proposed project includes a 244,068 square-foot building,

approximately 34 employees, on 5.12 acres zoned light industrial (GI Partners 2022e). Also, the project's demand of 2 AFY is less than the amount needed for 500 dwelling units. Moreover, the project would be located in a well-studied service area with many service connections. Therefore, the project does not meet section 10912's criteria and does not require a WSA.

California Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Code (2011), Title 24, Part 11 Update (2022).

The California Green Buildings Standards Code applies to planning, design, operation, construction, and occupancy of newly constructed buildings, requiring the installation of energy- and water-efficient indoor infrastructure. The associated waste management plan requires the diversion of 50 percent of construction-generated waste away from landfills.

Integrated Waste Management Act. The Integrated Waste Management Act of 1989 requires cities and counties to reduce by 50 percent the amount of solid waste disposed of in landfills by the year 2000 and beyond. To comply with the Integrated Waste Management Act, counties adopt regulations and policies to fulfill the requirements of the Act.

California Senate Bill 350 (Renewable Energy Targets). Senate Bill (SB) 350, the Clean Energy and Pollution Reduction Act of 2015, calls for the adoption of regulations to increase the procurement of electricity from renewable sources from 33 percent to 50 percent by January 1, 2030. SB 350 also requires the establishment of annual targets for statewide energy efficiency savings and demand reduction by November 1, 2017. These energy efficiency savings and demand reductions will be designed to achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas use by 2030.

California Senate Bill 1383 (Renewable Energy Targets). Effective January 1, 2022, SB 1383 requires municipalities to immediately reduce organic waste in landfills by 50 percent% of 2014 levels. Also as of 2025, organic waste would be reduced by 75 percent and 20percent of edible food would be recovered for human consumption. In addition, SB 1383 also requires municipalities to conduct education and outreach programs to encourage residents and businesses to recycle organic waste.

Local

City of Santa Clara 2010-2035 General Plan. The City of Santa Clara 2010-2035 General Plan (General Plan) includes numerous policies related to utilities and service systems. With respect to waste, General Plan Policy 5.10.1-P8 aims to reduce solid waste tonnage to 80 percent by 2020 (Santa Clara 2014). Measure 4.2 of the Climate Action Plan (CAP) was incorporated into the General Plan to achieve the goal of an 80 percent reduction in solid waste generation (Santa Clara 2013).

Santa Clara City Code Ordinance 1947 (City Code 8.25.285). One provision of City Ordinance 1947, requires that applicants seeking building or demolition permits for

projects greater than 5,000 square feet, recycle at least 50 percent of the solid waste generated by the project.

Santa Clara City Reach Code Ordinance 2034 (City Code 15.36.040). Provisions of City Ordinance 2034 stipulate that all newly constructed buildings will be "All-Electric", with some exemptions.

4.18.2 Environmental Impacts

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Construction and Operation

Less Than Significant Impact. The project's wastewater discharge during construction and operation would be treated by the RWF. Typical of other low wastewater-producing industries; data centers produce low volumes of wastewater with no hazardous constituents. Treated wastewater is monitored by the San Francisco Bay RWQCB to ensure compliance with the facility's NPDES wastewater discharge permit. The RWF is permitted to treat the industrial and sanitary waste flows that would be generated by the project. Furthermore, as discussed below, the RWF has sufficient available capacity to accommodate the project's estimated wastewater flow. Therefore, the project would not cause the RWF to exceed its wastewater treatment requirements of the San Francisco Bay RWQCB for project construction and operation. The impact of the project on wastewater treatment capacity would be less than significant.

The maximum generation capacity of the BBGF (72 MWs) would be solely dedicated to the BDC and not interconnected to the electrical transmission grid thereby having no impact on the electrical infrastructure.

The designed total average demand of 60 MWs for the BDC (GI Partners 2022e) would result in an annual use of 525,600 MWh per year. Electricity demand for the proposed BDC would be provided by SVP (GI Partners 2022e). In 2021, SVP sold approximately 4.03 million MWh to its customers, the vast majority of which was for non-residential (industrial) customers (SVP 2021). As of the end of 2021, SVP owned supplies and guaranteed future deliveries totaling an estimated 4.13 million MWh per year of total energy supplies (SVP 2021). The BDC's estimated annual energy demand of 525,600 MWh per year would be 12.7 percent of SVP's overall electrical supply creating a significant impact. However, SVP Chief Operating Officer, Kevin Kolnowski has testified in recent data center proceedings that SVP is taking multiple actions to meet the requirements of SB 100 and that the additional load from data centers is anticipated and accounted for in the SVP demand analysis and integrated resource planning process. SVP currently has adequate resources to meet expected demand through 2030. Mr. Kolnowski

has testified that SVP already has over 400 MW of renewable power coming online in the next several years, an additional 100 MW of renewable power being investigated as SVP continues to procure renewable energy supply (CEC 2020a and CEC 2022b).

Telecommunication services for the proposed project would be supplied by providers that have been serving the existing businesses in the project area. Those providers have adequate available capacity to accommodate the project needs during construction and operation. The impact of the project on telecommunication services would be less than significant.

PG&E owns natural gas distribution facilities within the city of Santa Clara; however, in accordance with the City's Reach Code, the project would not utilize natural gas.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Construction and Operation

Less Than Significant Impact. The water system in the city of Santa Clara is operated and maintained by the City's Department of Water and Sewer Utilities. Potable water supply for the project area is serviced by both imported surface water from the San Francisco Public Utilities Commission (SFPUC) and groundwater locally produced from the Santa Clara Valley subbasin. According to the 2020 Santa Clara Urban Water Management Plan (UWMP), the citywide demand for potable water in 2020 was 18,302 AF (Santa Clara 2021). The City also distributed 3,499 AFY of recycled water in 2020, which resulted in 19 percent of potable water savings for the City (Santa Clara 2021). The UWMP also concludes that the City is expected to meet projected future demands ranging from approximately 24,043 AFY in 2025 and gradually increasing to approximately 31,676 AFY in 2045. Those demands include recycled water demands projected to be approximately 4,570 AFY in 2025 and gradually increase to approximately 9,488 AFY in 2045.

The project is estimated to use approximately 1.75 AF during the anticipated 24 months of construction (GI Partners 2022e). That is equivalent to 0.88 AFY, which is less than half the project's estimated annual demand of approximately 2.0 AFY for operational needs, which, as discussed below, is less than the historic use of 3.2 AFY by the previous user at the project site. The impact of construction water demand would, therefore, be less than significant.

The proposed project would have an operational demand of approximately 2.0 AFY of potable water, with up to 1 AFY used for landscaping purposes. The City's 2020 UWMP shows that the City has a sufficient supply to meet the project's demand in normal and single dry-year scenarios. However, under a multi-year drought scenario, the City's supply from SFPUC might be interrupted if certain conditions specified in the interruptible contract between the City and SFPUC are met (Santa Clara 2021). If supply from SFPUC is interrupted for any reason, the City has conservation plans in place to manage the

water supply shortage. Examples of measures the City would implement include increasing groundwater pumping, encouraging customers to practice voluntary conservation, or imposing mandatory reductions in severe shortage situations (Santa Clara 2021).

The proposed project would be constructed on a previously disturbed, fully developed site that was originally used for commercial purposes. Historic annual potable water use of the existing commercial facility has been approximately 3.2 AFY. Thus, the proposed project would result in a slight net reduction in potable water use benefiting local water supplies.

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction and Operation

Less Than Significant Impact. The RWF treats an average of 110 mgd of wastewater, which is 57 mgd less than its 167 mgd treatment capacity. The current facility at the project site generates approximately 8,797,833 gallons per year (gpy) of wastewater, or 0.024 mgd. The applicant estimates that the project would generate approximately 50,797,069 gallons of wastewater per year. Compared with current conditions, this would be a 41,999,236 gpy increase of wastewater. However, implementation of the proposed project would not result in an increase in the RWF's need for wastewater treatment beyond its design capacity. Therefore, the impact on wastewater treatment facilities would be less than significant.

The majority of the project site is currently covered with impervious surfaces. The project would reduce impervious areas at the site, which would result in more stormwater infiltration and, thus, a reduction in stormwater runoff. The proposed project would also include a stormwater collection system partially consisting of 6,300 square feet of Low-Impact Development (LID) bioretention areas to reduce the overall runoff into the City's stormwater collection system. In addition, the project would have to comply with the City's municipal stormwater permit, which would further reduce the likelihood of the project causing an increase in stormwater discharge from the site. Although the project would not be expected to increase stormwater runoff, implementation of the new stormwater collection system described above would ensure that the project would comply with the City's municipal stormwater permit. The impact of the project on the stormwater system capacity would be less than significant.

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction and Operation

Less Than Significant Impact. The demolition and construction activities for the project would result in minor amounts of solid waste resulting in a temporary increase. The project would divert construction and demolition waste during project construction to help the City reach its 80 percent waste diversion rate as required by Measure 4.2 of the CAP (GI Partners 2022e). Operations would result in the long-term generation of a small amount of solid waste.

Based on estimates using default solid waste disposal rates for a general heavy industry scenario (CAPCOA 2016), the project would generate approximately 302.65 tons per year of solid waste per year or 0.83 tons of solid waste per day (GI Partners 2022e). The solid waste would be disposed of at the Newby Island Landfill in San Jose. On December 7, 2016, The City of San Jose approved the expansion of the Newby Island Landfill by raising the height of the existing landfill by 95 feet, thereby increasing landfill capacity by 15.12 million cubic yards (San Jose 2016). According to CalRecycle, as of January 31, 2020, Newby Island Landfill is permitted to accept a maximum of 4,000 tons of solid waste per day, has a remaining disposal capacity of 16.4 million cubic yards, and is permitted to operate until 2041 (CalRecycle 2020). The estimated solid waste generation rate of 0.83 tons per day constitutes a small fraction (0.02 percent) of the total daily capacity of 4,000 tons per day the landfill is capable of processing. Thus, the project would not significantly increase solid waste generation and could be accommodated by existing solid waste facilities.

Therefore, the impact resulting from the construction and operation of the proposed project on landfill capacity would be less than significant.

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction and Operation

Less Than Significant Impact. Construction debris would be collected and hauled off-site for recycling or disposal in local jurisdictions that have programs that ensure solid waste disposal complies with the Integrated Waste Management Act. Construction and demolition waste would be diverted from the landfill during project construction to help the City reach its 80 percent waste diversion rate as required by Measure 4.2 of the City's CAP. The project would not result in an adverse impact on solid waste collection and would comply with management and reduction regulations (GI Partners 2022e).

Typically, data centers do not generate special or unique wastes. Likewise, this project would not generate any special or unique wastes to cause non-compliance with federal, state, and local statutes or solid waste management and reduction regulations. The management of hazardous waste and applicable federal regulations are discussed in **Section 4.9 Hazards and Hazardous Materials**.

During operation, the project would comply with federal, state, and local statutes and regulations related to solid waste and recycling requirements. Specifically, the project would handle its solid waste in compliance with City regulations and measures to achieve recycling goals. The project would recycle as much as possible of the solid waste generated and dispose only of permitted wastes. In the unlikely event that the waste handler determines that the project is disposing of wastes that could be recycled, they would notify the project owner to alter its waste stream to facilitate compliance with the City requirements. There would be no change in compliance with federal, state, or local statutes and regulations related to solid waste management and reduction; therefore, there would be a less than significant impact.

4.18.3 Mitigation Measures

None required.

4.18.4 References

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4.19 Wildfire

This section describes the environmental setting and regulatory background and discusses impacts associated with the construction and operation of the project with respect to wildfires.

WILDFIRE	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
i. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
ii. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
iii. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
iv. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Environmental criteria established by CEQA Guidelines, Appendix G.

4.19.1 Environmental Setting

Wildfire Hazards

The Department of Forestry and Fire Protection (Cal Fire) identifies and maps areas of significant fire hazards based on fuels, terrain, and other relevant factors. These maps categorize this information by Fire Hazard Severity Zones (FHSZ), grouped into unzoned, moderate, high, and very high zones. State Responsibility Areas (SRA) are locations where the State of California is responsible for wildfire protection and Local Responsibility Areas (LRA) are locations where the responding agency is the county or city.

The California Public Utilities Commission (CPUC) categorizes fire threat areas as Tier 1, Tier 2, or Tier 3. Tier 1 (or CAL FIRE Zone 1) encompasses High Hazard Zones (HHZ) on the United States Forest Service joint map of Tree Mortality HHZ. This tier represents areas where tree mortality directly coincides with critical infrastructure such as

communities, roads, and utility lines, and are a direct threat to public safety. Tier 2 consists of areas where there is an elevated risk (including likelihood and potential impacts on people and property) from wildfires associated with overhead utility power lines or overhead utility power-line facilities also supporting communication facilities. Tier 3 consists of areas where there is an extreme risk (including likelihood and potential impacts on people and property) from wildfires associated with overhead utility power lines or overhead utility power-line facilities also supporting communication facilities.

The project site is surrounded by industrial development in the city of Santa Clara and is not located in or near an SRA but is located within a LRA (Cal Fire 2022a). The project is not near a moderate, high, or very high FHSZ (Cal Fire 2022b). It is also not on land classified as having a fire threat by the CPUC. The city of Santa Clara is also not in the vicinity of wildlands.

Regulatory Background

Federal

No federal regulations related to wildfires apply to the project.

State

Fire Hazard Severity Zones (Pub. Resources Code, §§ 4201-4204). The purpose is to provide for the classification of lands within SRAs in accordance with the severity of fire hazard present and identify measures to be taken to retard the rate of spreading and to reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property.

Fire Hazard Severity (Cal. Code Regs, tit. 14, § 1280). FHSZs reflect the degree of severity of fire hazard.

CPUC General Order 95: Rules for Overhead Electric Line Construction. CPUC General Order 95, Section 35, covers all aspects of design, construction, operation, and maintenance of overhead electrical lines and management of safety hazards. Its application would ensure adequate service and safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

CPUC General Order 166: Standards for Operation, Reliability, and Safety During Emergencies and Disasters. CPUC General Order 166 covers the standards which require all electric utilities to be prepared for emergencies and disasters in order to minimize damage and inconvenience to the public which may occur as a result of electric system failures, major outages or hazards posed by damage to electric distribution facilities.

Local

Santa Clara County Operational Area Hazard Mitigation Plan. The plan includes risk assessment that identifies the natural hazards and risks that can impact a community based on historical experience, estimate the potential frequency and magnitude of disasters, and assess potential losses to life and property. The plan also includes developed mitigation goals and objectives as part of a strategy for mitigating hazard-related losses.

4.19.2 Environmental Impacts

a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

i. Substantially impair an adopted emergency response plan or emergency evacuation plan?

Construction

No Impact. During project construction, traffic levels would experience a minimal increase that is not expected to degrade traffic performance significantly. Emergency response access during construction would not be significantly impeded. The project would not involve the development of structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No streets would be closed, rerouted, or substantially altered during construction.

Additionally, the project is not located in or near a SRA or a very high FHSZ, or land classified as having a fire threat by the CPUC.

Operation

No Impact. The project does not involve the addition of a large number of people to the local area as discussed in **Section 4.14 Population and Housing** and thereby would not increase emergency response demand during a potential evacuation. Thus, the project would not interfere with the coordination of the County's emergency operations plan at the emergency operations center or alternate emergency operations center, nor would the project interfere with any statewide emergency response, or evacuation routes or plans. Adequate emergency access to the project site and surrounding area would be maintained.

Additionally, the project is not located in or near a SRA or a very high FHSZ, or land classified as having a fire threat by the CPUC.

ii. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Construction and Operation

No Impact. The topography of the project site is flat, and the area surrounding the project is a mixture of commercial, industrial, and residential development with minimal slopes. Therefore, project construction would not exacerbate wildfire risk or expose occupants to pollutant concentrations from a wildfire.

Additionally, the project is not located in or near a SRA or a very high FHSZ, or land classified as having a fire threat by the CPUC.

iii. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Construction

No Impact. The project would construct several linear features that include a domestic potable water line, a fire water line, an offsite recycled water line, a sanitary sewer line, an electrical supply line, an irrigation line and a storm water drainage line. The domestic potable, fire water, storm water, irrigation and sanitary sewer lines would be underground utilities that connect to the existing utilities in Bowers Avenue along the frontage of the property. The recycled water line would follow existing Bowers Avenue to Walsh Avenue and connect at the intersection of Walsh Avenue and Northwestern Parkway. The construction of these utilities would not block access to any road or result in traffic congestion.

The project would require the installation of an onsite distribution substation. The substation would require up to three transmission poles located on site to connect to the adjacent Silicon Valley Power Uranium substation. The installation of the substation and transmission poles would not block access to any road or result in traffic congestion. Therefore, the constructed electrical supply line and other project infrastructure would not constitute a possible ignition source for local vegetation, nor would it block access to any road or result in traffic congestion.

Additionally, the project is not located in or near a SRA or a very high FHSZ, or land classified as having a fire threat by the CPUC.

Operation

No Impact. The project would not require the installation of associated infrastructure that could exacerbate fire risk or result in impacts to the environment. Maintenance of the project and proposed utilities would not physically block any access roads or result in traffic congestion that could significantly compromise timely access to this facility or any other location.

Additionally, the project is not located in or near a SRA or a very high FHSZ, or land classified as having a fire threat by the CPUC.

iv. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Construction

No Impact. The project would not substantially alter local drainage patterns. Storm water discharge during construction would be managed according to the project's Storm Water Pollution Prevention Plan. The project would therefore not be expected to contribute to a flooding hazard onsite or offsite. For further discussion of the potential flooding impacts that could result from the construction of the proposed project, please see the discussion in **Section 4.10 Hydrology and Water Quality**.

As discussed in this section, the topography of the project site and surrounding area is relatively flat. Therefore, the project would not be exposed to post-fire slope instability or drainage changes.

Additionally, the project is not located in or near a SRA or a very high FHSZ, or land classified as having a fire threat by the CPUC.

Operation

No Impact. Operation of the project would not alter the course of a drainage (stream or river) and would not substantially alter local drainage patterns. The proposed onsite storm drainage system would be designed to meet the City's storm water drainage standards and sized adequately to convey water away from the site and to the City of Santa Clara's storm drain system. The project would therefore not contribute to a flooding hazard onsite or offsite.

As discussed in this section, the topography of the project site and surrounding area is relatively flat and minimally developed. Therefore, the project would not be exposed to post-fire slope instability or drainage changes.

Additionally, the project is not located in or near a SRA or a very high FHSZ, or land classified as having a fire threat by the CPUC.

4.19.3 Mitigation Measures

None required.

4.19.4 References

Cal Fire 2022a – Department of Forestry and Fire Protection (CalFire). *Santa Clara County Fire Hazard Severity Zones in Local Responsibility Area*. Accessed on: December 21, 2022. Available online at: https://osfm.fire.ca.gov/media/5935/san_jose.pdf

Cal Fire 2022b – Department of Forestry and Fire Protection (CalFire). *Santa Clara County Fire Hazard Severity Zones in State Responsibility Area*. Accessed on: December 21, 2022. Available online at: https://osfm.fire.ca.gov/media/6766/fhszs_map43.pdf

4.20 Mandatory Findings of Significance

This section describes impacts specific to mandatory findings of significance associated with the construction and operation of the project.

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)??	☐	☒	☐	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant with Mitigation Incorporated.

Biology Resources

Less Than Significant with Mitigation Incorporated. With the implementation of staff recommended mitigation measures (**BIO-1** and **BIO-2**) included in **Section 4.4 Biological Resources**, the project would not substantially degrade the quality of the environment, substantially reduce the existing habitat of any fish or wildlife species, cause

any fish or wildlife population to drop below self-sustaining levels, threaten to eliminate any plant or animal community, or substantially reduce the number or restrict the range of an endangered, threatened, or rare plant or animal species.

The project site is in a highly developed area and surrounded by commercial and industrial buildings. Therefore, the potential to degrade environmental quality is minimal, as the project site and surrounding properties do not support natural vegetation that would allow for extensive wildlife foraging or occupancy. However, mature landscaping trees and shrubs provide nesting opportunities for protected bird species. Existing structures and trees also provide roosting opportunities for protected bat species. The implementation of mitigation measures **BIO-1** and **BIO-2**, which would require avoidance and minimization measures for protected bird species and protected bat species, would ensure that project impacts would be less than significant.

Cultural and Tribal Cultural Resources

Less Than Significant with Mitigation Incorporated. Important examples of the major periods of California history or prehistory represented by historical, unique archaeological, or tribal cultural resources are not known to be present in the project area. Nevertheless, the extent of proposed ground disturbance has the potential to damage unknown, buried archaeological resources in the project area. As described in **Section 4.5 Cultural and Tribal Cultural Resources**, the majority of archaeological resources aged about 5,000 years or older are buried beneath the ground surface. If these resources were to be exposed or destroyed, it would be a significant impact. Implementation of staff recommended mitigation measures (**CUL-1** through **CUL-9**) included in **Section 4.5 Cultural and Tribal Cultural Resources** would reduce the impacts to buried cultural resources to a less-than-significant level. The proposed project therefore is unlikely to eliminate important examples of major periods of California history or prehistory, therefore the impact would be less than significant.

Geology and Soils

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

As described in **Section 4.7 Geology and Soils**, the level of paleontological sensitivity at the project site is considered to be low at and near the ground surface within the alluvial deposits of Holocene age; however, older Pleistocene age sediments present at or near the ground surface at some locations have a high potential to contain these

resources. These older sediments, often found at depths greater than 10 feet below the ground surface, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates (GI Partners 2022e). The project site is located in the Santa Clara Valley, an area known to have scientifically significant but widespread or intermittent fossil discoveries. While surficial sediments have been mapped as Holocene age, paleontological evidence indicates that Pleistocene age (2.6 million to 11,700 years before present) sediments may also be present at or near the surface. Five fossil sites have been found at or near the ground surface within two miles of the project site, especially along stream beds.

There could be a potential to disturb paleontological resources during the construction activities requiring earth moving, such as grading, trenching, excavation for foundations, and installation of support structures, where native soil would be disturbed. The maximum depth of soil disturbance is estimated to vary between 3 and 16 feet below the existing grade for utility trenching (GI Partners 2022f) and if deep foundations are used, piles could extend 80 feet below the existing grade surface.

Ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources. The applicant proposed a measure to reduce impacts to unique paleontological resources or unique geologic features. This measure requires that in the event paleontological resources are discovered all work shall be halted within 50 feet of the find and a Paleontological Resource Mitigation Plan be prepared by a qualified paleontologist to address assessment and recovery of the resource. A final report documenting any found resources, their recovery, and disposition shall be prepared in consultation with the Director of Community Development and filed with the City of Santa Clara (City) and local repository. The CEC staff reviewed this measure and finds it insufficient to reduce impacts to less than significant as there are no measures included to train workers to identify potential paleontological resources if encountered during construction activities thus resulting in damage or destruction to paleontological resources.

Staff proposes implementation of mitigation measure **GEO-1,** included in **Section 4.7 Geology and Soils**, which includes all of the above-mentioned mitigation measures proposed by the applicant, plus requires the development of a Worker Environmental Awareness Program (WEAP) to be implemented by a qualified paleontologist. The WEAP should include proper procedures (including training on the identification of paleontological resources and worker notification procedures) in the event fossil materials are encountered during construction.

Staff concludes that with adherence to the General Plan policies (5.6.3-G1, 5.6.3-G2, 5.6.3-P1, 5.6.3-P2, 5.6.3-P4, and 5.3.6-P5) and implementation of **GEO-1** impacts to buried paleontological resources would be reduced to a less-than-significant level (Santa Clara 2010). The proposed project therefore is unlikely to eliminate important examples of paleontological resources that are part of the prehistory of California.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less Than Significant with Mitigation Incorporated. California Environmental Quality Act (CEQA) Guidelines section 15130(b) state that an adequate discussion of significant cumulative impacts can employ one of two methods to establish the effects of other past, current, and probable future projects. A lead agency may select a list of projects, including those outside the control of the agency, or, alternatively, a summary of projections. These projections may be from an adopted general plan or related planning document, or from a prior environmental document that has been adopted or certified, and these documents may describe or evaluate the regional or area-wide conditions contributing to the cumulative impact.

General Plan Projection

This section evaluates cumulative impacts using the City of Santa Clara 2010-2035 General Plan Integrated Final Environmental Impact Report (General Plan FEIR) since the project would be consistent with applicable land use plans and policies (Santa Clara 2011). The General Plan FEIR identified that the build out of the General Plan would contribute to five, significant and unavoidable cumulative impacts in the areas of climate change, noise, population and housing, traffic, and solid waste.

General Plan Significant Unavoidable Impacts

The General Plan FEIR identified the following significant unavoidable environmental impacts applicable to the proposed project:

- Climate Change – Contribution to greenhouse gas (GHG) emissions exceeding Santa Clara's emission reduction target for 2035;
- Noise – Increase in localized traffic noise level on roadway segments throughout Santa Clara;
- Population and Housing – Exacerbation of land use impacts arising from the jobs/housing imbalance;
- Solid Waste – Contribution to solid waste generation beyond available capacity after 2024; and
- Traffic – Degradation of traffic operations on regional roadways and highways within Santa Clara of an unacceptable level of service.

Although the project, in combination with future development in the city of Santa Clara, could conceivably have a significant cumulative impact to these environmental resources, the following discussion demonstrates how the project's contribution to these impacts would be less than cumulatively considerable.

Greenhouse Gas Emissions (Climate Change)

Less Than Significant Impact with Mitigation Incorporated. The General Plan FEIR identified significant unavoidable impacts from contribution to greenhouse gas (GHG) emissions exceeding the City's emission reduction target for 2035. The Bay Area Air Quality Management District (BAAQMD) 2017 CEQA Air Quality Guidelines do not identify a GHG emissions threshold for construction-related emissions. Instead, BAAQMD recommends that GHG emissions from construction be quantified and disclosed, and the impacts be determined in relation to meeting Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006) GHG reduction goals. BAAQMD further recommends incorporation of best management practices (BMPs) to reduce GHG emissions during construction, as feasible and applicable. The project's construction emissions would be in conformance with state and local GHG emissions reduction goals, so impacts would be less than significant and not cumulatively considerable.

For readiness testing and maintenance-related emissions, the BAAQMD 2017 CEQA Air Quality Guidelines states that for stationary-source projects, the threshold to determine the significance of an impact from GHG emissions is 10,000 metric tons per year of carbon dioxide equivalent ($MTCO_2e/yr$). However, BAAQMD is in the process of preparing and presenting to the BAAQMD board for approval an update to the CEQA GHG threshold of significance for stationary sources to 2,000 $MTCO_2e/yr$ or compliance with the California Air Resources Board's cap-and-trade program. However, this proposed update to the BAAQMD threshold of significance has not been adopted as of the date of this analysis. As a stationary source, the project's emergency backup generators may be subject to the pending CEQA GHG threshold. The emergency backup generators would not have a cumulatively considerable contribution to GHGs because estimated emissions would be below the applicable BAAQMD CEQA GHG threshold.

Based on BAAQMD's 2017 CEQA Guidelines, other project-related emissions from mobile sources, area sources, energy use and water use, would not be included for comparison to the stationary source threshold. Instead, in April 2022, the BAAQMD updated thresholds of significance to assist lead agencies when evaluating the indirect and "non-stationary" source emissions of land use development projects. Under the BAAQMD's 2022 CEQA thresholds of significance for land use projects, a CEQA lead agency can conclude that a project would not make a cumulatively considerable contribution to global climate change if the project is designed and built to be consistent with the requirements of either Option A or Option B of the BAAQMD thresholds. Because the proposed project includes a General Plan Amendment, it cannot rely on a GHG Reduction Strategy as outlined in Option B of the BAAQMD thresholds. In Option A, projects must include, at a minimum, the project design elements of buildings and transportation. In Option B, projects must be consistent with a local GHG reduction strategy that meets the criteria under CA CEQA Guidelines Section 15183.5(b) (BAAQMD 2022, p.2). As a result, the project's consistency with the requirements of Option A of the BAAQMD thresholds would be used to determine the significance of the project's operational GHG emissions.

Staff proposes implementation of mitigation measure **GHG-1** which would require the applicant to use renewable diesel for 100 percent of total energy use by the emergency backup generators, and only use ultra-low sulfur diesel (ULSD) as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. Staff also proposes implementation of **GHG-2** which would require the applicant to participate in Silicon Valley Power's Large Customer Renewable Energy (LCRE) program or other renewable energy program that accomplishes the same objective as SVP's LCRE Program for 100 percent carbon-free electricity or purchase carbon offsets renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity. With the implementation of the mitigation measures described in **Section 4.8 Greenhouse Gas Emissions** of this analysis (**GHG-1** and **GHG-2**), the project would ensure that the project-related emissions would not significantly add to the global problem of climate change, nor would the project hinder California's ability to reach California's GHG reduction goals in any significant way, even when considered cumulatively. Additionally, the project would implement efficiency measures to meet California green building standards, and additional voluntary efficiency and use reduction measures. As such, with implementation of **GHG-1** and **GHG-2**, GHG emissions related to the project would not conflict with the City's Climate Action Plan (CAP) or other plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. Therefore, the project's GHG emissions would not be considered cumulatively significant.

Noise

Less Than Significant. The General Plan FEIR identified significant unavoidable impacts from an increase in localized traffic noise level on roadway segments throughout Santa Clara, associated with the build out of the General Plan. The project site is already developed and traffic to the site would already be part of the existing traffic levels. The project would contribute to vehicle trips during project operations from workers commuting to the project and trucks deliveries. The project's trips would not significantly add to regular traffic. The implementation of staff's proposed mitigation measure **TRANS-1** would ensure the project-related vehicle miles travelled (VMT) would be reduced to a level below the City's industrial threshold and the impact would be less than significant. Thus, project-related traffic would not substantially increase traffic noise levels in the project area. Any noise impacts associated with construction and operation-related traffic would be less than significant and not cumulatively considerable.

Construction would not occur on Sundays and holidays, in compliance with Santa Clara City Code, section 9.10.230. Construction activities would increase the ambient noise levels by up to 8 A-weighted decibels (dBA). This is less than 10 dBA and would likely have a less-than-significant impact. Additionally, the elevated noise levels from construction activities would be lower than those from passing trains along the Caltrain corridor. Passing trains intermittently elevate noise levels at these residences by up to 83 dBA L_{max}—23 dBA above the existing daytime ambient level of 60 dBA L_{eq} at this location. In addition, the city would require a series of performance standards, as part of their condition of approval for construction. These performance standards are ultimately used

as a backstop measure to address any noise impacts that might be perceived by the community.

Sources of operational noise for the project would include the backup generators, rooftop mechanical equipment including HVAC and other equipment necessary for project operation. The City's General Plan Policy (Section 5.10.6) requires existing and new industrial development to reduce the effects of operational noise on adjacent properties through compliance with noise standards in the Santa Clara City Code,section 9.10.040). Since the project is near residential land use, noise reduction measures, such as mechanical equipment enclosures and parapet walls, would be required (incorporated in the operational noise modeling). Thus, the operational noise levels would comply with the City's noise limits and would not elevate the existing ambient noise levels at the nearest residences.

The project's construction and operational noise impacts would be less than significant. Therefore, the project's noise impacts would not be cumulatively considerable.

Population and Housing

Less Than Significant Impact. The General Plan FEIR identified significant unavoidable impacts from the exacerbation of land use impacts arising from the jobs/housing imbalance, associated with build out of the General Plan. The General Plan FEIR concluded that cumulative projects would accommodate two new jobs for every new employed resident, exacerbating Santa Clara County's existing jobs-housing imbalance which in essence means that workers unable to live near their employment commute long distances from outlying areas with affordable housing, continuing a pervasive trend over the past several decades as job growth has outpaced housing growth in Santa Clara County. As described in **Section 4.14 Population and Housing**, the project would not displace any people or housing, or necessitate construction of replacement housing elsewhere. Operation of the project is anticipated to require 33 to 35 employees in the building on an average day. The project's construction and operation workforce would not directly or indirectly induce a substantial population growth in the project area. Therefore, the project's contribution to the jobs-housing imbalance would not be cumulatively considerable.

Utilities and Service Systems (Solid Waste)

Less Than Significant Impact. The General Plan FEIR identified significant unavoidable impacts from contribution to solid waste generation beyond available capacity after 2024. As determined in **Section 4.17 Utilities and Service Systems**, adequate water supply, as well as wastewater treatment capacity, are available to serve the project. Likewise, there are adequate electricity and telecommunication services in the vicinity to meet the project's needs. Natural gas resources would not be used on the project as proposed.

The nearby Newby Island Landfill has available landfill capacity through 2041. The current landfill impacts are addressed within an ongoing Santa Clara County Integrated Waste Management Plan to provide waste disposal services. The project would generate minimal

operational waste as data centers typically require very little equipment turnover. Additionally, the project does not include a residential component and would not increase the supply and demand of utility services and infrastructure. Therefore, the project's contribution to this cumulative impact would not be considerable.

Transportation

Less Than Significant with Mitigation Incorporated. The General Plan FEIR identified significant unavoidable impacts from a degradation of traffic operations on regional roadways and highways within Santa Clara of an unacceptable level of service, associated with the build-out of the General Plan. As discussed in **Section 4.17 Transportation**, implementation of **TRANS-1** would reduce the project generated VMT to a level below the city's industrial threshold and reduce the project impact to a less than significant level. With implementation of **TRANS-1**, the project's contribution to cumulative transportation impacts during project construction and operation would not be cumulatively considerable.

Other Technical Areas

Although the City's General Plan FEIR did not identify significant unavoidable impacts in the areas of air quality, biological resources, cultural resources, geology and soils (paleontology), and hazards and hazardous materials and did not include an analysis of impacts to tribal cultural resources as the General Plan FEIR was adopted before the passage of Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) requiring such analysis, the CEC staff concluded that the project's impacts in these areas are *less than significant with mitigation*. Thus, staff have considered whether the project would contribute to cumulatively considerable impacts in these areas. Staff has also included an analysis of potential cumulative impacts for the other technical areas where project impacts would be *less than significant*.

Aesthetics

Less Than Significant Impact. The proposed project would be constructed on relatively flat land in a developed urban area within the city of Santa Clara. Land uses in the area consist of low intensity, heavy- and light-industrial uses that include larger mid-rise buildings, manufacturing, construction-related industries, warehousing and distribution, data centers, and repair services with a combination of surface and structured parking and well-landscaped grounds. San José Mineta International Airport is a little more than 1.8 miles to the east. The Caltrain corridor is to the south.

As discussed in **Section 4.1 Aesthetics** there are no scenic vistas in the project area. Existing aboveground buildings, structures, earthworks, equipment, trees, and vegetation, et cetera block or limit public views of the project and new or foreseeable projects from scenic resources in the vicinity.

The project and new or foreseeable projects within this "urbanized area" as defined per Public Resources Code, section 21071 would not conflict with applicable City zoning and other regulations governing scenic quality.

The project includes outdoor lighting for driveways, entrances, walkways, parking areas, and security purposes. Outdoor lighting would be angled downward onsite and include light visors, light hoods, and utilize lighting controls to reduce energy usage. LED lighting fixtures would be installed throughout the project site.

The project site does not border a residential use. The nearest residential area is approximately 500 feet south of the project site on the opposite side of the Caltrain corridor.

Air Quality

Less Than Significant with Mitigation Incorporated. The proposed project would be in Santa Clara County in the San Francisco Bay Area Air Basin (SFBAAB), under the jurisdiction of the BAAQMD. The SFBAAB is designated as a nonattainment area for ozone and particulate matter with a diameter of 2.5 microns or less (called "PM2.5") under both California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The SFBAAB is also designated as nonattainment for particulate matter with a diameter of 10 microns or less (called "PM10") under CAAQS, but not NAAQS.

SFBAAB's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. In developing thresholds of significance for air pollutants, BAAQMD considers the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. CEQA would then require implementation of all feasible mitigation measures.

The construction emissions of the project would be lower than the thresholds of significance from the BAAQMD CEQA Air Quality Guidelines. There is no numerical threshold for fugitive dust generated during construction in BAAQMD's jurisdictional boundaries. The BAAQMD CEQA Guidelines recommend the control of fugitive dust through BMPs to conclude that impacts from fugitive dust emissions are less than significant. The implementation of staff's proposed mitigation measure **AQ-1** would reduce air quality impacts during project construction. This measure requires incorporation of BAAQMD's recommended construction BMPs to control fugitive dust. This measure also incorporates exhaust control measures to reduce emissions from construction equipment. With the implementation of **AQ-1**, PM10 and PM2.5 emissions during construction would be reduced to a level that would not result in a considerable increase of these pollutants. Therefore, the project's construction emissions would not be cumulatively considerable.

During readiness testing and maintenance, the oxides of nitrogen (NOx) emissions of the emergency backup generators are estimated to exceed the BAAQMD significance threshold of 10 tons per year. All other pollutants would have estimated emissions rates below BAAQMD significance thresholds. The NOx emissions from the emergency backup generator readiness testing and maintenance would be required to be fully offset through the BAAQMD permitting process. Therefore, the project's emissions during readiness testing and maintenance would not be cumulatively considerable.

The criteria pollutant air quality impact analysis found that the concentrations from construction and readiness testing and maintenance of the gensets would not cause any exceedance of ambient air quality standards. Therefore, the project's criteria air pollutant impacts from genset readiness testing and maintenance would be less than significant.

The health risk assessment shows that the project's health risk impacts would not exceed BAAQMD significance thresholds during construction or emergency backup generator readiness testing and maintenance. The project would not expose sensitive receptors to substantial toxic air contaminant (TAC) concentrations during construction or emergency backup generator readiness testing and maintenance.

Due to the infrequent nature of emergency conditions and the record of highly reliable electric service available to the project (see **Appendix B**), the project's emergency operations would be unlikely to expose sensitive receptors to substantial concentrations of criteria air pollutants or TACs.

For the reasons discussed above, the project's air quality impacts would not be cumulatively significant.

Biological Resources

Less Than Significant with Mitigation Incorporated. With implementation of staff recommended mitigation measures (**BIO-1** and **BIO-2**), the project would not substantially degrade the quality of the environment, substantially reduce the existing habitat of any fish or wildlife species, cause any fish or wildlife population to drop below self-sustaining levels, threaten to eliminate any plant or animal community, or substantially reduce the number or restrict the range of an endangered, threatened, or rare plant or animal species.

The project site is in a highly developed area and surrounded by commercial and industrial buildings. Therefore, the potential to degrade environmental quality is minimal, as the project site and surrounding properties do not support natural vegetation that would allow for extensive wildlife foraging or occupancy. However, existing buildings, mature landscaping trees and shrubs to be removed as part of the project may provide nesting opportunities for protected bird species and special status bat species. Implementation of mitigation measures **BIO-1** and **BIO-2**, which would require avoidance and minimization measures for protected birds and special status bats, would ensure that project impacts would be less than significant.

Cultural and Tribal Cultural Resources

Less Than Significant Impact with Mitigation Incorporated. The General Plan FEIR does not specifically address impacts on tribal cultural resources. Historical resources and unique archaeological resources, as defined by CEQA, share several of the impact vulnerabilities that tribal cultural resources face, especially the effects of ground-disturbing activities. In addition, historical and unique archaeological resources can also qualify as tribal cultural resources. The suite of mitigation measures for cultural resources presented in the General Plan FEIR would reduce the severity of some impacts on tribal cultural resources. No known tribal cultural resources have been found on the project site, although ground disturbance associated with the proposed project could result in the exposure and destruction of buried, as-yet unknown archaeological resources that could qualify as tribal cultural resources. Implementation of **CUL-1** through **CUL-9** would prevent, minimize, or compensate for impacts on buried, tribal cultural resources. Project impacts to tribal cultural resources therefore would not be cumulatively considerable.

Energy

Less Than Significant Impact. The project would use 32 Tier 4 renewable diesel-fired gensets for emergency backup generation. The total number of hours of operation from the gensets for operational reliability purposes would be limited to no more than 50 hours annually.

At a rate of 50 hours, the total quantities of renewable diesel as primary fuel or ultra-low sulfur diesel (ULSD or conventional) as secondary fuel used for all the generators operating at full load would be approximately 7,900 barrels per year (bbl/yr). California has renewable diesel and USLD fuel supply of approximately 6,300,000 bbl/yr and 310,000,000 bbl/yr, respectively. The project's use of renewable diesel or ULSD fuel constitutes a small fraction (less than 0.13 or 0.0025 percent, respectively) of available resources. Both renewable diesel and ULSD fuel supply are more than sufficient to meet necessary demand of the project. For these reasons, the project's use of fuel would be less than significant.

The project's consumption of energy resources during operation would not be inefficient or wasteful, as discussed in **Section 4.6 Energy**. Project operation would have a less than significant adverse effect on local or regional energy supplies and energy resources and likewise, would not be cumulatively considerable.

Geology and Soils

Less Than Significant with Mitigation Incorporated. Significant paleontological resources that represent important examples of the major periods of California prehistory are known to be present in the project area. The extent of proposed ground disturbance has the potential to damage unknown, buried paleontological resources in the project footprint. As described in **Section 4.7 Geology and Soils**, paleontological resources may be buried beneath the ground surface in Pleistocene age sediments. Five fossil sites have been found at or near the ground surface within several miles of the project site,

particularly along stream beds (UCMP 2020). If significant paleontological resources were to be exposed or destroyed, it would be a significant impact. Implementation of **GEO-1** included in **Section 4.7 Geology and Soils** would reduce the impacts to buried paleontological resources to a less-than-significant level. The proposed project therefore is unlikely to eliminate important examples of paleontological resources that are part of the prehistory of California, therefore the impact would be less than significant.

Hazards and Hazardous Materials

Less Than Significant with Mitigation Incorporated. As discussed in **Section 4.9 Hazards and Hazardous Materials,** ground disturbing activities associated with grading and construction activities of the project could have the potential to encounter contaminated soil and water. Additionally, demolition activities could run into lead based paint (LBP). Implementation of staff's proposed mitigation measure **HAZ-1** would require testing and removal of LBP contaminated materials prior to building demolition. Implementation of staff's proposed mitigation measure **HAZ-2** would require a Site Mitigation Plan to be created along with a Health and Safety Plan (HSP). The Site Mitigation Plan would establish proper procedures to be taken when contaminated soil is found and how to dispose of the contaminated soil properly. The Health and Safety Plan would establish worker training and provide provisions for personal protective equipment and procedures in the event contaminated soil or water is encountered. In addition, if contaminated soils are found in concentrations above thresholds, the project would halt construction and the contaminated soil would be treated in place or removed to an appropriate disposal facility. Implementation of staff's proposed mitigation measure **HAZ-3** would require the testing of soil and groundwater per plan and protocols developed in the Site Mitigation Plan to fully identify any potential contamination at the project site. With the implementation of **HAZ-1, HAZ-2,** and **HAZ-3** the construction of the project would create a less than significant impact to the public or the environment.

The proposed project would use hazardous materials in small quantities associated with construction. These hazardous materials would be stored in designated construction staging areas in compliance with local, state, and federal requirements. Any diesel fuel transported on site would also comply with the extensive regulatory framework that applies to the shipment of hazardous materials. In addition, the project owner would implement procedures and safety features and precautions that would reduce the risk of an accidental hazardous materials release. Therefore, the impact from the use, transport, disposal, or accidental release of hazardous materials would not be cumulatively significant.

Hydrology and Water Quality

Less Than Significant Impact. The project would be required to comply with the City's Flood Damage Prevention Code (Santa Clara City Code Chapter 15.45), the Construction and Municipal NPDES Permits, and the Santa Clara Valley Urban Runoff Pollution Prevention Program. The plans and permits work together to establish specific requirements to reduce storm water pollution from new and redevelopment projects,

singularly and cumulatively. If implemented as described in **Section 4.10 Hydrology and Water Quality** of this analysis, these standards would protect the watershed receiving discharge from the project from a cumulatively considerable impact to the basin's hydrology. Similarly, these same plans and permits would be protective of water quality. These standards would be protective of the quality of both surface water and groundwater bodies receiving discharge from the project.

Land Use and Planning

Less Than Significant Impact. The project site has a General Plan land use designation of High Intensity Office/Research and Development (R&D) and a zoning designation of Light Industrial. The General Plan land use designation of High Intensity Office/R&D does not allow stand-alone data centers and is inconsistent with the site's zoning designation of Light Industrial. Due to the inconsistency between the site's General Plan designation and zoning designation, City staff recommended that the project owner apply with the City for a General Plan amendment to change the project site's General Plan land use designation to Light Industrial, which allows stand-alone data centers and is consistent with the site's zoning designation of Light Industrial.

Although the Light Industrial General Plan designation allows for stand-alone data centers, the list of permitted uses in the Light Industrial zoning district does not include data centers (Santa Clara 2023, Section 18.48.030). However, Section 18.48.040 of the Zoning Code provides for allowance of "other uses not normally permitted, but that are…appropriate for an industrial area" with City approval of a Conditional Use Permit (CUP) (Santa Clara 2023, Section 18.48.040(e)(2)). The City has permitted data centers in the Light Industrial zoning district in the past, and the General Plan land use designation of Light Industrial lists data centers as an allowed use. Therefore, a data center could be allowed on the project site with the City's issuance of a CUP.

With the City's approval of a General Plan amendment to change the project's land use designation to Light Industrial, and with the City's issuance of a CUP for the project, the project would be consistent with the description of uses allowed under the site's General Plan and zoning designations. The project would not conflict with land use plans or policies such that significant environmental impacts would occur, and there would be no cumulative impacts from conflicts with local land use regulations.

Public Services

Less Than Significant Impact. As discussed in **Section 4.15 Public Services**, the construction and operation of the project would not result in substantial adverse physical environmental impacts associated with the provision of new or physically altered fire and police service facilities in order to maintain acceptable service ratios, response times, or other performance objectives. The project would be consistent with the planned growth in the general plan. The project would be constructed in conformance with current building and fire codes, and the Santa Clara Fire Department would review project plans to ensure appropriate safety features are incorporated.

In accordance with California Government Code, section 65996, the project would be required to the appropriate school impact fees to the Santa Clara Unified School District. The operation of the project would require 33 to 35 employees in the building on an average day. Given the availability of the existing workforce in the Bay Area, the operation employees would likely reside within commuting distance to the project site and would not relocate closer to the project. Even if the operation workforce would relocate closer to the project site, the additional population would be consistent with growth projections and service ratios in the General Plan and thus the project would not cause significant environmental impacts associated with the provision of new or physically altered park and other public facilities in order to maintain acceptable service ratios or other performance objectives. The project's impacts to public services would not be cumulatively considerable.

Recreation

Less Than Significant Impact. As discussed in **Section 4.16 Recreation**, the project does not require or propose the construction or expansion of recreation facilities. Operation of the project would require 33 to 35 employees in the building on an average day. The project's operation workforce would be consistent with growth projections and service ratios in the General Plan and, thus, the project would not increase the use of existing parks or recreational facilities to the extent that substantial physical deterioration of the park or facility would result. The project's impacts to recreation would not be cumulatively considerable.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact with Mitigation Incorporated. The proposed project would not cause substantial adverse effects on human beings either directly or indirectly. The proposed project would result in less than significant temporary impacts to human health during construction, including changes to air quality, and exposure to geologic hazards, noise, and hazardous materials. As discussed in **Section 4.3 Air Quality**, with implementation of **AQ-1** to control emissions during project construction and NOx emissions fully offset for engine testing and maintenance, the project would result in a less-than-significant impact related to human health. As discussed in **Section 4.7 Geology and Soils**, impacts to people or property associated with geologic or seismic conditions onsite would be less than significant. As discussed in **Section 4.13 Noise**, the temporary noise impacts to humans during construction and intermittently during operation would be less than significant. As discussed in **Section 4.9 Hazards and Hazardous Materials**, hazards impacts would be less than significant with the implementation of **HAZ-1** and **HAZ-2**. As discussed in **Section 4.10 Hydrology and Water Quality**, water quality impacts would be less than significant. No additional impacts to human beings would occur during operation and maintenance activities.

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4.21 Environmental Justice

This section describes the environmental setting and regulatory background, and discusses impacts specific to environmental justice associated with the construction and operation of the project.

4.21.1 Environmental Setting and Regulatory Background

The United States Environmental Protection Agency (U.S. EPA) defines environmental justice (EJ) as, "the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies" (U.S. EPA 2015, page 4).

The "Environmental Justice in the Energy Commission Site Certification Process" subsection immediately below describes why EJ is part of the California Energy Commission's (CEC) site certification process, the methodology used to identify an EJ population, and the consideration of California Environmental Protection Agency's (CalEPA) California Communities Environmental Health Screening Tool (CalEnviroScreen). Below that, the "Environmental Justice Project Screening" subsection presents the demographic data for those people living in a six-mile radius of the project site and a determination on presence or absence of an EJ population. When an EJ population is identified, the analyses in 10 technical areas[1] and Mandatory Findings of Significance consider the project's impacts on this population and whether any impacts would disproportionately affect the EJ population. Lastly, the "Project Outreach" subsection discusses the CEC's outreach program specifically as it relates to the proposed project.

Environmental Justice in the Energy Commission Siting Process

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," focuses federal attention on the environment and human health conditions of minority communities and calls on federal agencies to achieve environmental justice as part of their mission. The order requires the U.S. EPA and all other federal agencies (as well as state agencies receiving federal funds) to develop strategies to address this issue. The agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations.

The California Natural Resources Agency (CNRA) recognizes that EJ communities are commonly identified as those where residents are predominantly minorities or live below the poverty level; where residents have been excluded from the environmental policy

1 The 10 technical areas are Aesthetics, Air Quality, Cultural and Tribal Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Population and Housing, Transportation, and Utilities and Service Systems. Cultural and Tribal Cultural Resources considers impacts to Native American populations.

setting or decision-making process; where they are subject to a disproportionate impact from one or more environmental hazards; and where residents experience disparate implementation of environmental regulations, requirements, practices, and activities in their communities. Environmental justice efforts attempt to address the inequities of environmental protection in these communities.

An EJ analysis is composed of the following:

- Identification of areas potentially affected by various emissions or impacts from a proposed project;
- Providing notice in appropriate languages (when possible) of the proposed project and opportunities for participation in public meetings to EJ communities;
- A determination of whether there is a comparatively larger population of minority persons, or persons below the poverty level, living in an area potentially affected by the proposed project; and
- A determination of whether there may be a significant adverse impact on a population of minority persons or persons below the poverty level caused by the proposed project alone, or in combination with other existing and/or planned projects in the area.

California law defines EJ as "the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Gov. Code, § 65040.12; Pub. Resources Code, §§ 71110-71118). All departments, boards, commissions, conservancies and special programs of the CNRA must consider EJ in their decision-making process if their actions have an impact on the environment, environmental laws, or policies. Such actions that require EJ consideration may include:

- adopting regulations;
- enforcing environmental laws or regulations;
- making discretionary decisions or taking actions that affect the environment;
- providing funding for activities affecting the environment; and
- interacting with the public on environmental issues

Bay Area Air Quality Management District Community Health Programs

The project site is located within the Bay Area Air Quality Management District (BAAQMD). BAAQMD has community health programs intended to reduce air pollution disparities in the San Francisco Bay Area. The Community Health Protection Program is BAAQMD's local implementation of the California Air Resources Board's (CARB) Community Air Protection Program, as enacted by Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017). The statewide Community Air Protection Program requires CARB to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health and to take measures to protect communities disproportionally impacted by air pollution. CARB is required to select the highest priority locations in the

state for the deployment of community air monitoring systems and select locations around the state for the preparation of community emissions reduction programs. CARB's governing board has selected 17 communities for a community emissions reduction program (CARB 2023). The project site is not located in an AB 617 community. In addition to falling outside a disproportionately affected community as determined by state law, this location also falls outside of such communities as identified by the local air district. The Community Air Risk Evaluation (CARE) program was implemented by BAAQMD to identify areas in the Bay Area that experience a disproportionate share of air pollution exposure. One goal of the CARE program is to identify areas where air pollution contributes most to health impacts and where populations are most vulnerable to air pollution (BAAQMD 2023). The proposed project is not located in a CARE community.

CalEnviroScreen- More Information About an EJ Population

CalEnviroScreen is a science-based mapping tool used by CalEPA to identify disadvantaged communities (DAC)[2] pursuant to Senate Bill 535 (De León, Chapter 830, Statutes of 2012). As required by SB 535, DACs are identified based on geographic, socioeconomic, public health and environmental hazard criteria. CalEnviroScreen identifies impacted communities by taking into consideration pollution exposure and its effects, as well as health and socioeconomic status, at the census-tract level. (OEHHA 2021, page 8).

Using data from federal and state sources, the tool consists of four components in two broad groups. The Exposure and Environmental Effects components comprise a Pollution Burden group, and the Sensitive Populations and Socioeconomic Factors components comprise a Population Characteristic Group. The four components are made up of environmental, health, and socioeconomic data from 21 indictors.

CalEnviroScreen scores present a relative, rather than an absolute, evaluation of pollution burdens and vulnerabilities in California communities by providing a relative ranking of communities across the state (OEHHA 2021, page 8). Calculating the CalEnviroScreen scores begins by assigning percentile scores to the 21 statewide indicators, which fall into two categories of Pollution Burden and Population Characteristics. The percentiles are averaged for the set of indicators in each of the four components (Exposures, Environmental Effects, Sensitive Populations, and Socioeconomic Factors). These four components in turn, are combined to yield an overall CalEnviroScreen score (CalEPA

2 The California Environmental Protection Agency, for purposes of its Cap-and-Trade Program, defines communities in terms of census tracts and identifies four types of geographic areas as disadvantaged: (1) census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0; (2) census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores; (3) census tracts identified in the 2017 DAC designation as disadvantaged, regardless of their scores in CalEnviroScreen 4.0; (4) and areas under the control of federally recognized Tribes (CalEPA 2022a).

2022a, pages 5-6). Each category has a maximum score of 10, and, thus, when multiplied the maximum CalEnviroScreen score is 100. Based on these scores, census tracts across California are ranked relative to one another. Values for the various components are shown as percentiles, which indicate the percent of all census tracts with a lower score. A higher percentile indicates a higher potential relative burden. A percentile does not describe the magnitude of the difference between two tracts, but rather it simply tells the percentage of tracts with lower values for that indicator (OEHHA 2021, page 20).

Table 4.21-1 lists the indicators that go into the Pollution Burden score and the Population Characteristics score to form the final CalEnviroScreen score. These indicators are used to measure factors that affect the potential for pollution impacts in communities.

TABLE 4.21-1 COMPONENTS THAT FORM THE CALENVIROSCREEN 4.0 SCORE

Pollution Burden	
Exposure Indicators	**Environmental Effects Indicators**
Children's lead risk from housing	Cleanup sites
Diesel particulate matter (PM) emissions	Groundwater threats
Drinking water contaminants	Hazardous waste
Ozone concentrations	Impaired water bodies
PM 2.5 concentrations	Solid waste sites and facilities
Pesticide use	
Toxic releases from facilities	
Traffic density	
Population Characteristics	
Sensitive Populations Indicators	**Socioeconomic Factors Indicators**
Asthma emergency department visits	Educational attainment
Cardiovascular disease (emergency department visits for heart attacks)	Housing-burdened low-income households
Low birth-weight infants	Linguistic isolation
	Poverty
	Unemployment

Notes: PM = particulate matter. PM 2.5 = fine particulate matter 2.5 microns or less. Source: OEHHA 2021

Part of staff's assessment of how, or if, the project would impact an EJ population includes a review of CalEnviroScreen data for the project area. There are three technical areas that could have project impacts that could combine with the indicators in CalEnviroScreen: Air Quality, Hydrology and Water Quality, and Utilities and Service Systems.

The CalEnviroScreen indicators relevant to each of the three technical areas are:

- For air quality, these indicators are asthma, cardiovascular disease, diesel PM emissions, low birth-weight infants, ozone concentrations, pesticide use, PM 2.5 concentrations, toxic releases from facilities, and traffic density.
- For hydrology and water quality, these indicators are drinking water contaminants, groundwater threats, and impaired water bodies.

- For utilities and service systems, these indicators are cleanup sites, hazardous waste, and solid waste sites and facilities.

When these technical areas have identified a potential project impact where an EJ population is present, CalEnviroScreen is used to better understand the characteristics of the areas where the impact would occur and ensure that DACs in the vicinity of the proposed project have not been missed when screened by race/ethnicity and low income.

Note that CalEnviroScreen is not intended to:

- substitute for a cumulative impact analysis under the California Environmental Quality Act (CEQA);
- restrict the authority of government agencies in permit and land use decisions; or,
- guide all public policy decisions.

Project Outreach

As a part of the U.S. EPA's definition of environmental justice, meaningful involvement is an important part of the siting process. Meaningful involvement occurs when:

- those whose environment and/or health would be potentially affected by the decision on the proposed activity have an appropriate opportunity to participate in the decision;
- the population's contribution can influence the decision;
- the concerns of all participants involved are considered in the decision-making process; and,
- decision makers seek out and facilitate the involvement of the population potentially affected by the decision.

The CEC staff and the Public Advisor's Office (PAO) coordinated closely on public outreach early in the review process. The Office of the Public Advisor, Energy Equity and Tribal Affair's outreach consists of emails to state and local elected officials, environmental justice organizations, local chambers of commerce, schools and school districts, labor unions and trade associations, community centers, daycare centers, park departments, and religious organizations within a twelve-mile radius of the proposed project.

The CEC staff docketed and mailed to the project mail list a Notice of Receipt of the BBGF SPPE Application on October 25, 2022. Based on current U.S. Census English fluency data for the population residing in the cities and communities within a six-mile radius of the project site, translation of the public notices was deemed appropriate. U.S. Census data also showed that of those who report they "speak English less than very well," the predominant languages spoken were Chinese and Spanish. The CalEnviroScreen data supports the U.S. Census fluency data, showing that the population in this immediate project area are linguistically isolated and translation is warranted. Public notices for the project in English, Chinese, and Spanish were posted to the project's docket and GovDelivery system on October 25, 2022. Public notices also were published in local

newspapers: in the San Jose Mercury News (in English) on November 4, 2022; in El Observador (in Spanish) on November 4-10, 2022; and in the World Journal (in Chinese) on October 31, 2022.

Staff conducted outreach and consultation with regional tribal governments as described in **Section 4.5 Cultural and Tribal Cultural Resources**.

As described in **Section 2 Introduction**, consistent with the noticing requirements under CEQA Guidelines Section 15087, staff mailed the Notice of Availability of the Draft EIR to all owners and occupants contiguous to the project site and linears.

Environmental Justice Project Screening

Figure 4.21-1 shows 2020 census blocks in a six-mile radius of the project with a minority population greater than or equal to 50 percent (U.S. Census 2020). The population in these census blocks represents an EJ population based on race and ethnicity as defined in the U.S. EPA's *Guidance on Considering Environmental Justice During the Development of Regulatory Actions* (U.S. EPA 2015).

Based on California Department of Education data in **Table 4.21-2** and presented in **Figure 4.21-2**, staff concludes that the percentage of those living in the Luther Burbank Elementary, Orchard Elementary, San Jose Unified, and Santa Clara Unified school districts (in a six-mile radius of the project site) and enrolled in the free or reduced-price meal program is larger than the percentage of those living in the reference geography (Santa Clara County) and enrolled in these programs. Thus, the population in this school district is considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

TABLE 4.21-2 LOW INCOME DATA WITHIN THE PROJECT AREA

School Districts in a Six-Mile Radius of the Project Site	Enrollment Used for Meals	Free or Reduced-Price Meals	
Berryessa Union Elementary	5,940	1,588	26.7%
Campbell Union	6,253	2,070	33.1%
Cupertino Union Elementary	13,467	2,153	16.0%
Luther Burbank Elementary	**422**	**350**	**82.9%**
Milpitas Unified	9,967	2,802	28.1%
Moreland	3,940	1,311	33.3%
Mountain View Whisman Elementary	4,522	1,283	28.4%
Orchard Elementary	**763**	**335**	**43.9%**
San Jose Unified	**26,479**	**11,284**	**42.6%**
Santa Clara Unified	**13,919**	**5,602**	**40.2%**
Sunnyvale Elementary	5,465	1,636	29.9%
Reference Geography			
Santa Clara County	236,428	80,551	34.1%

Note: **Bold** indicates school districts considered having an EJ population based on low-income
Source: CDE 2023

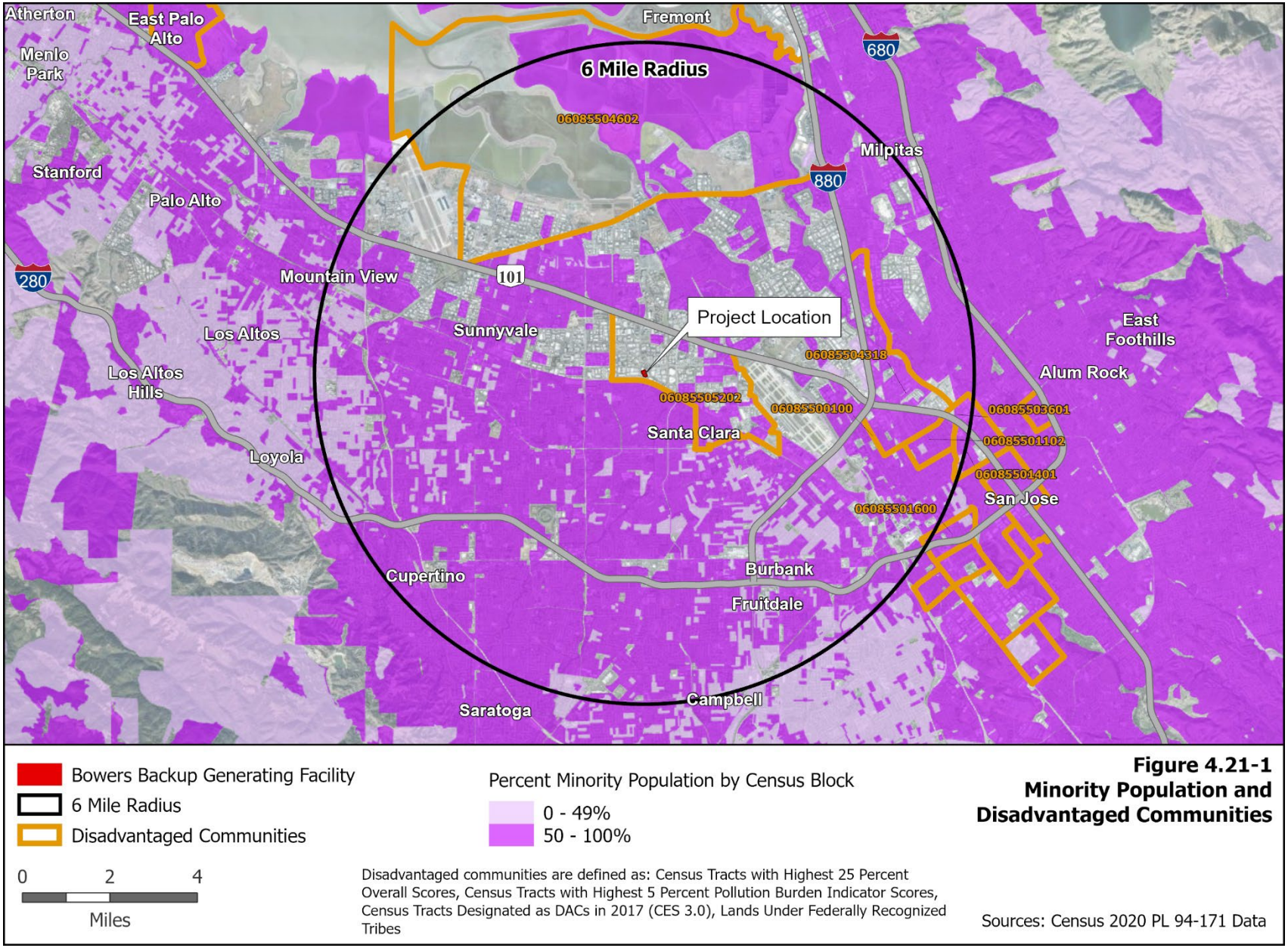

Figure 4.21-1
Minority Population and Disadvantaged Communities

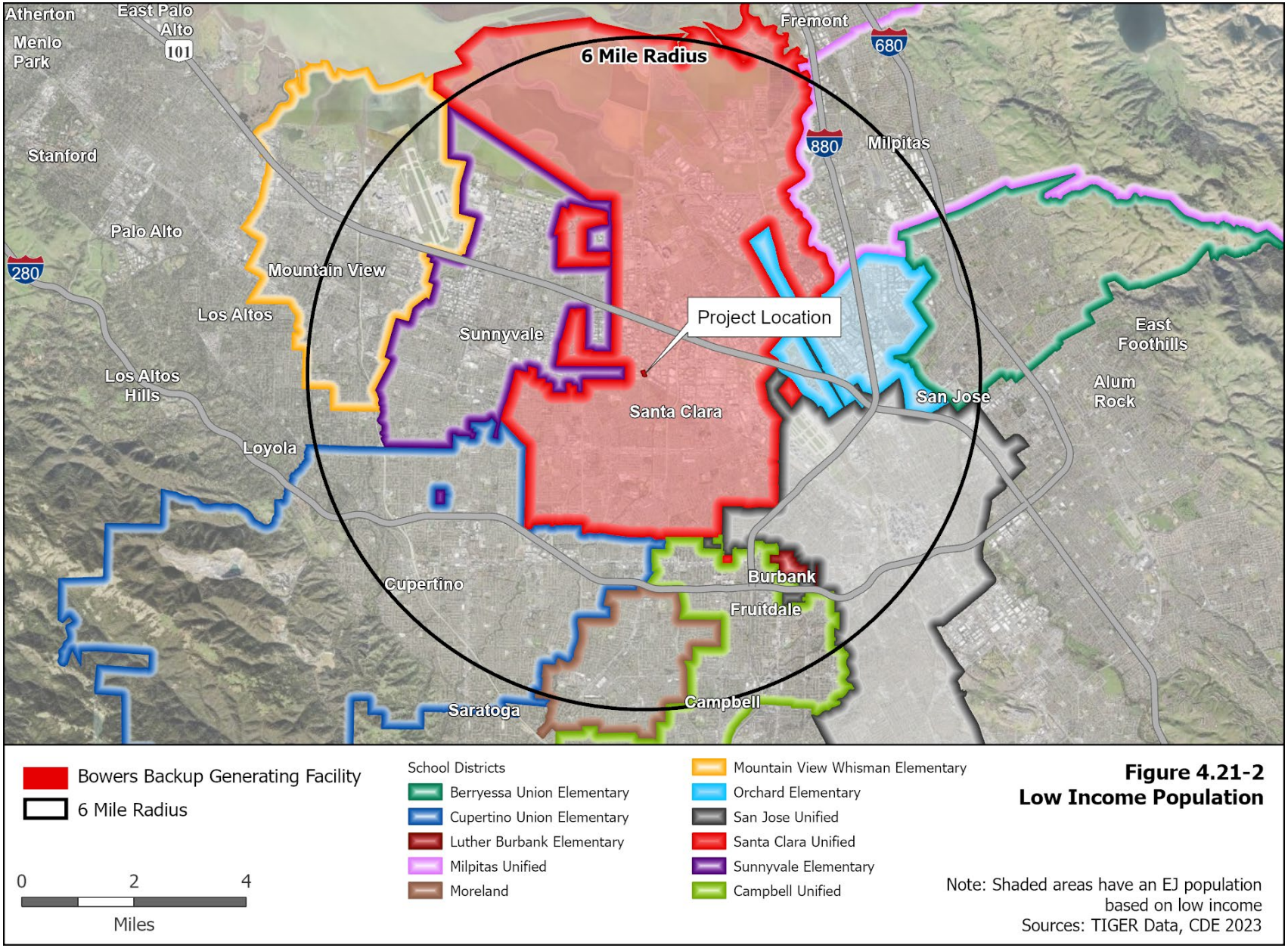

Figure 4.21-2
Low Income Population

Note: Shaded areas have an EJ population based on low income
Sources: TIGER Data, CDE 2023

CalEnviroScreen- Disadvantaged Communities

CalEnviroScreen 4.0 was used to gather additional information about the population potentially impacted by the proposed project. The CalEnviroScreen indicators (see **Table 4.21-1**) are used to measure factors that affect the potential[3] for pollution impacts in communities. Staff used CalEnviroScreen to identify the disadvantaged communities (DACs)[4] in the vicinity of the proposed project and better understand the characteristics of the areas where impacts could occur.

Table 4.21-3 presents the CalEnviroScreen overall scores and DAC category for the DACs within a six-mile radius of the project site. The location of each of these census tracts is shown on **Figure 4.21-1**.

TABLE 4.21-3 CALENVIROSCREEN SCORES FOR DISADVANTAGED COMMUNITIES

Census Tract No.	Total Population	CES 4.0 Percentile	Pollution Burden Percentile	Population Characteristics Percentile	DAC Category
06085504602	2,355	66.97	82.46	49.76	CES 3.0 DAC only
06085505202	6,936	59.53	86.86	37.92	CES 3.0 DAC only
06085504318	6,095	80.06	88.82	63.28	CES 4.0 top 25 percent
06085500100	8,306	71.19	89.77	50.16	CES 3.0 DAC only
06085503601	3,383	85.36	84.12	76.94	CES 4.0 top 25 percent
06085501102	4,305	71.32	79.53	57.83	CES 3.0 DAC only
06085501401	3,226	71.72	67.98	66.69	CES 3.0 DAC Only
06085501600	7,716	85.01	77.80	81.48	CES 4.0 top 25 percent

Note: Disadvantaged communities by census tract in the project's six-mile radius. Shaded row indicates census tract where the project is located. Source: CalEPA 2021

3 It is important to note that CalEnviroScreen is not an expression of health risk and does not provide quantitative information on increases of impacts for specific sites or project. CalEnviroScreen uses the criteria of "proximity" to a hazardous waste site, a leaking underground tank, contaminated soil, an emission stack (industry, power plant, etc.) to determine that a population is "impacted". It does not address general principles of toxicology: dose/response and exposure pathways. For certain toxic chemicals to pose a risk to the public, offsite mitigation pathways must exist (through ingestion, inhalation, dermal contact, etc.) and contact to a certain amount- not just any amount – must exist.

4 The CalEPA, for purposes of its Cap-and-Trade Program, has defines communities in terms of census tracts and identifies four types of geographic areas as disadvantaged: (1) census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0; (2) census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores; (3) census tracts identified in the 2017 DAC designation as disadvantaged, regardless of their scores in CalEnviroScreen 4.0; (4) and areas under the control of federally recognized Tribes. (CalEPA 2022a).

Table 4.21-4 presents the CalEnviroScreen percentiles for the indicators that make up the pollution burden percentile. **Table 4.21-5** presents the CalEnviroScreen percentiles for the indicators that make up the population characteristics.

TABLE 4.21-4 CALENVIROSCREEN INDICATOR PERCENTILES FOR POLLUTION BURDEN FOR DISADVANTAGED COMMUNITIES

Census Tract No.	Percentiles													
	Pollution Burden	Ozone	PM2.5	Diesel PM	Drinking Water	Lead	Pesticides	Toxic Release	Traffic	Cleanup Sites	Groundwater Threats	Hazardous Waste	Impaired Water Bodies	Solid Waste
06085504602	82.46	15.05	19.43	29.00	39.04	50.59	0.00	30.32	94.13	99.38	94.17	93.21	91.87	99.95
06085505202	86.86	17.65	22.50	79.33	50.17	56.66	1.97	37.85	82.46	99.85	98.41	98.37	33.16	95.01
06085504318	88.82	20.85	33.71	90.49	22.74	52.73	4.97	39.48	94.31	99.74	96.73	99.85	33.16	99.77
06085500100	89.77	20.85	37.86	89.71	22.74	70.23	3.59	35.00	81.73	98.11	96.26	98.99	43.78	97.87
06085503601	84.12	20.85	35.76	91.50	22.74	93.48	0.00	33.02	91.00	81.02	62.49	91.36	33.16	84.74
06085501102	79.53	20.85	36.85	63.71	22.74	91.30	0.41	33.76	68.21	83.58	88.01	86.45	33.16	91.43
06085501401	67.98	20.85	37.29	78.38	22.74	83.02	0.00	33.03	87.66	62.04	73.75	28.30	33.16	98.22
06085501600	77.80	20.85	37.13	95.13	22.74	83.20	0.79	32.10	79.25	50.56	91.57	65.18	43.78	77.96

Notes: Disadvantaged communities by census tract in the project's six-mile radius. Shaded row indicates census tract where the project is located. Source: CalEPA 2021

TABLE 4.21-5 CALENVIROSCREEN INDICATOR PERCENTILES FOR POPULATION CHARACTERISTICS FOR DISADVANTAGED COMMUNITIES

Census Tract No.	Percentiles								
	Population Characteristics	Asthma	Low Birth Weight	Cardiovascular Disease	Education	Linguistic Isolation	Poverty	Unemployment	Housing Burden
06085504602	49.76	37.96	98.85	40.00	73.42	NA	27.85	36.44	23.80
06085505202	37.92	28.61	54.62	47.52	55.80	15.64	35.15	4.89	89.21
06085504318	63.28	36.05	71.79	28.12	78.63	95.72	59.52	78.97	46.02
06085500100	50.16	66.59	54.12	42.40	66.31	76.64	40.80	17.11	26.17
06085503601	76.94	73.54	77.05	53.39	79.42	95.03	78.45	21.11	63.26
06085501102	57.83	69.65	61.41	45.03	65.20	67.72	34.70	52.52	37.48
06085501401	66.69	60.99	73.33	31.68	79.73	93.80	65.93	29.41	62.42
06085501600	81.48	72.98	91.34	39.71	63.76	67.45	80.28	64.51	94.47

Notes: Disadvantaged communities by census tract in the project's six-mile radius. Shaded row indicates census tract where the project is located. Source: CalEPA 2021

4.21.2 Environmental Impacts

The following technical areas discuss impacts to EJ populations: Aesthetics, Air Quality[5], Cultural and Tribal Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Population and Housing, Transportation, and Utilities and Service Systems.

Part of staff's assessment of how, or if, the project would impact an EJ population includes a review of CalEnviroScreen data for the project area. There are three technical areas that could have project impacts that could combine with the indicators in CalEnviroScreen: Air Quality, Hydrology and Water Quality, and Utilities and Service Systems. When these technical areas have identified a potential impact where an EJ population is present, CalEnviroScreen is used to better understand the characteristics of the areas where the impact would occur and ensure that disadvantaged communities in the vicinity of the proposed project have not been missed when screened by race/ethnicity and low income.

Aesthetics

Less Than Significant Impact. A disproportionate impact pertaining to Aesthetics to an EJ population may occur if a project is in proximity to an EJ population and the following:

- The project, if in an "urbanized area" per Public Resources Code section 21071, conflicts with applicable zoning and other regulations governing scenic quality.
- The project, if in a non-urbanized area, substantially degrades the existing visual character or quality of the public view of the site and its surroundings.
- The project creates a new source of substantial light and glare that would adversely affect day or nighttime views in the area.

The project is in an urbanized area as defined in Public Resources Code, section 21071. According to this section of the Public Resources Code, the project conforms to the applicable city zoning and other regulations governing scenic quality.

Staff viewed aerial and street imagery (Google Earth and Google Maps), other maps, and site photographs in addition to the EJ figures and concludes the nearest EJ population would have no to low visibility of the project due to the existence of aboveground landscape components (buildings, structures, earthworks, trees, etc.) obstructing or obscuring the public view of the project from the identified population.

The project design includes outdoor lighting that would be angled downward and would include light visors and light hoods (GI Partners 2022e). The design also includes installing

5 Public Health concern discussed under Air Quality

light-emitting diode (LED) lighting throughout the project site. Project components would have no to low reflectivity offsite.

The project would not have a disproportionate effect to an EJ population and would have a less than significant impact.

Air Quality

Less Than Significant with Mitigation Incorporated. **Tables 4.21-4** and **4.21-5** include indicators that relate to both air quality and public health. The indicators that are associated with criteria pollutants such as ozone, fine particulate matter having a diameter of less than or equal to 2.5 microns (PM2.5), and nitrogen dioxide (NO_2) are indicators related to air quality. Indicators that are associated with protecting public health are: Diesel PM, Pesticide Use, Toxic Release from Facilities, Traffic Density, Asthma, Low Birth Weight Infants, and Cardiovascular Disease. Each of these air quality and public health indicators are summarized under this Air Quality subsection.

Ambient air quality standards (AAQS) are established to protect the health of even the most sensitive individuals in our communities, which includes the EJ population, by defining the maximum amount of a pollutant that can be present in outdoor air without harm to the public's health. Both the CARB and the U.S. EPA are authorized to set ambient air quality standards. Since toxic air contaminants have no AAQS that specify health-based levels considered safe for everyone, a health risk assessment (HRA) is used to determine if people might be exposed to those types of air pollutants at unhealthy levels.

Staff identified the potential air quality (i.e., ozone and PM2.5) that could affect the EJ population represented in **Figures 4.21-1** and **4.21-2**. Staff also examined individual contributions of indicators in CalEnviroScreen that are relevant to air quality (see **Table 4.21-4**).

Staff identified the potential public health impacts (i.e., cancer and non-cancer health effects) that could affect the EJ population represented in **Figures 4.21-1** and **4.21-2**. These potential public health risks were evaluated quantitatively based on the most sensitive population, which includes the EJ population, by conducting an HRA. The results were presented by levels of risk. The potential construction and emergency backup generator (gensets) readiness testing and maintenance risks are associated with exposure to diesel PM.

In **Section 4.3 Air Quality**, staff concludes that, with the implementation of mitigation measure **AQ-1** and oxides of nitrogen (NOx) emissions fully offset through the permitting process with BAAQMD, the project would not have a significant impact on air quality or public health. Criteria pollutants would not cause or contribute to exceedances of health-based ambient standards and the project's toxic air emissions would not exceed health risk limits. Likewise, the project would not cause disproportionate air quality or public health impacts on sensitive populations, such as the EJ population represented in **Figures 4.21-1** and **4.21-2**.

The text below addresses each of the air quality and public health indicators included in **Tables 4.21-4** and **4.21-5**.

Ozone Impacts

Ozone is known to cause numerous health effects, which can potentially affect EJ communities through:

- lung irritation, inflammation and exacerbation of existing chronic conditions, even at low exposures (Alexis et al. 2010, Fann et al. 2012, Zanobetti and Schwartz 2011);
- an increased risk of asthma among children under 2 years of age, young males, and African American children (Lin et al., 2008, Burnett et al., 2001); and,
- higher mortality, particularly in the elderly, women, and African Americans (Medina-Ramon, 2008).

Even though ozone is not directly emitted from emission sources such as the gensets, precursor pollutants that create ozone, such as NOx and volatile organic compounds (VOCs), would be emitted. The NOx emissions of the gensets during readiness testing and maintenance would be required to be fully offset through the permitting process with the BAAQMD. For a more detailed discussion see, **Section 4.3 Air Quality**.

For CalEnviroScreen, the air monitoring data used in this indicator have been updated to reflect ozone measurements for the years 2017 to 2019. CalEnviroScreen 4.0 uses the average daily maximum 8-hour ozone concentration (ppm) for the summer months (May-October), averaged over three years (2017-2019). According to CalEnviroScreen data, ozone concentrations in each census tract are ordered by ozone concentration values, and then are assigned a percentile based on the statewide distribution of values.

Results for ozone are shown in **Table 4.21-4.** Ozone levels in the census tracts are relatively low, with percentiles up to 21. Another way to look at the data is that approximately more than 79 percent of all California census tracts have higher ozone levels than these census tracts near the project. For ozone, the census tracts within a six-mile radius of the proposed project's site are not exposed to high ozone concentrations compared to the rest of the state.

The project would not be expected to contribute significantly to the regional air quality as it relates to ozone. The project would be required to comply with air quality emission rate significance thresholds for NOx and VOCs, which are precursor pollutants that create ozone during the construction and testing and maintenance phases. The project would use best management practices (BMPs) during construction, which would reduce NOx and VOCs during construction. The project's impacts would not be expected to cause exceedance of ambient air quality standards during readiness testing and maintenance. NOx emissions resulting from readiness testing and maintenance would be high enough to trigger offset requirements due to BAAQMD Regulation 2, Rule 2. Therefore, the NOx emissions would need to be fully offset to reduce net impacts to levels below the

BAAQMD's CEQA threshold. VOC emissions would be below the BAAQMD's threshold of significance and the applicant would not be required to offset them. Therefore, the project would not contribute significantly to regional ozone concentrations, relative to baseline conditions.

Staff concludes that the project would not expose sensitive receptors to substantial ozone precursor concentrations. The project's ozone and ozone precursor air quality impacts would be less than significant for the local EJ community and the general population. Additionally, as NOx emissions of the standby generators would be fully offset, the project would not result in a cumulatively considerable net increase of secondary pollutants such as ozone in the air basin.

PM2.5 Impacts

Particulate matter (PM) is a complex mixture of aerosolized solid and liquid particles including such substances as organic chemicals, dust, allergens and metals. These particles can come from many sources, including cars and trucks, industrial processes, wood burning, or other activities involving combustion. The composition of PM depends on the local and regional sources, time of year, location and weather.

PM2.5 refers to particles that have a diameter less than or equal to 2.5 micrometers. PM2.5 is known to cause numerous health effects, which can potentially affect EJ communities. Particles in this size range can have adverse effects on the heart and lungs, including lung irritation, exacerbation of existing respiratory disease, and cardiovascular effects.

For CalEnviroScreen, the indicator PM2.5 is determined by the annual mean concentration of PM2.5 (weighted average of measured monitor concentrations and satellite observations, µg/m3), averaged over three years (2015-2017). According to CalEnviroScreen data, PM2.5 concentrations in each census tract are ordered by PM2.5 concentration values, and then are assigned a percentile based on the statewide distribution of values and are shown in **Table 4.21-4**. The percentiles range between 19.43 and 37.13, with the lowest from census tract 06085504602 and the highest from census tract 06085501600.

Census tract 06085501600 was at the 37.13 percentile in the PM2.5 category (see **Table 4.21-4**). This indicates that PM2.5 concentrations in this census tract are higher than 37.13 percent of tracts statewide. This indicates that these communities are exposed to below average PM2.5 concentrations compared to the rest of the state.

The project would not be expected to contribute significantly to the regional air quality related to PM2.5. The project would not expose sensitive receptors to substantial pollutant concentrations of PM2.5 during construction or the readiness testing and maintenance of the gensets. The project would use BMPs during construction, which would reduce PM emissions. The gensets would be equipped with diesel PM filters,

which would reduce PM emissions from the engines. Therefore, the project would not contribute significantly to regional PM2.5 concentrations, relative to baseline conditions.

The project's PM2.5 air quality impacts would be less than significant for the local EJ community and the general population. Additionally, as NOx emissions of the gensets would be fully offset, the project would not result in cumulatively considerable net increase of secondary pollutants, such as PM, in the air basin. **Section 4.3 Air Quality** includes an additional assessment of other criteria air pollutant impacts, including NO_2 impacts. Staff's analysis indicates that the project would not cause adverse NO_2 impacts during construction or readiness testing and maintenance. The project's NO_2 air quality impacts would be less than significant for the local EJ community and the general population.

Diesel Particulate Matter (Diesel PM)

This indicator represents how much diesel PM is emitted into the air within and near the census tract. The data are from 2016 CARB's emission data from on-road vehicles (trucks and buses) and off-road sources (ships and trains, for example). This is the most recent data available with which to make the necessary comparisons.

Table 4.21-4 shows that among these census tracts, three are higher than the 90th percentile. They are 95.13, 91.50, and 90.49 (in census tracts 06085501600, 06085503601, and 06085504318, respectively), meaning these three are higher than 95.13, 91.5 and 90.49 percent of the census tracts in California.

However, according to the results of the HRA conducted for this project in **Section 4.3 Air Quality**, impacts associated with diesel PM from the proposed project construction and readiness testing and maintenance activities (diesel-fueled equipment) would be less than significant and would not have a significant cumulative contribution to the diesel PM levels in the disadvantaged communities. Therefore, the project's diesel PM impacts would be less than significant for the local EJ community and the general population.

Pesticide Use

Specific pesticides included in the Pesticide Use category were narrowed from the list of all registered pesticides in use in California to focus on a subset of 132 active pesticide ingredients that are filtered for hazard and volatility for the years 2017-2019 collected by the California Department of Pesticide Regulation. Only pesticides used on agricultural commodities are included in the indicator.

Census tracts on **Table 4.21-4** were all below the 10^{th} percentile in the Pesticide Use category. This indicates that pesticide use in these census tracts are below the statewide average in terms of pesticide use. This indicates that these communities are not exposed to high pesticide concentrations as compared to the rest of the state.

Toxic Releases from Facilities

This indicator represents modeled toxicity-weighted concentrations of chemical releases to air from facility emissions and off-site incineration in and near the census tract. The U.S. EPA provides public information on the amount of chemicals released into the environment from many facilities. This indicator uses the modeled air concentration and toxicity of the chemical to determine the toxic release score. The data are from 2017-2019.

Table 4.21-4 shows that all census tracts are fairly similar, with the percentiles being around 30. The highest percentile is from census tract 6085504318 (39.48), meaning this census tract is higher than 39.48 percent of tracts statewide. This indicates that these communities are lower than the state average for exposure to toxic releases.

According to the results of the health risk assessment conducted for the project in **Section 4.3 Air Quality**, impacts associated with toxic releases from the proposed project construction and readiness testing and maintenance activities (diesel-fueled equipment) would be less than significant. The project would not have a significant cumulative contribution to toxic releases. The project's toxics emissions would be less than significant for the local EJ community and the general population.

Traffic Density

This indicator represents the sum of traffic volumes adjusted by road segment length. It is calculated as the sum of traffic volumes adjusted by road segment length (vehicle-kilometers per hour) divided by total road length (kilometers) within 150 meters of the census tract. It is not a measure of level of service on roadways. The data are from 2017.

Table 4.21-4 shows three census tracts are higher than the 90th percentile. The highest one is 94.31 (in census tract 06085504318), meaning it is higher than 94.31 percent of the census tracts in California. Traffic impacts is related to the diesel PM emitted from diesel-fueled vehicles. Census tract 06085504602 and 06085503601 were at the 94.13 and 91st percentile, respectively. However, according to the results of the health risk assessment conducted for the project in **Section 4.3 Air Quality**, impacts associated with diesel PM from the project construction and readiness testing and maintenance activities (diesel-fueled equipment) would be less than significant and would not have a significant cumulative contribution to the diesel PM-related traffic density in the disadvantaged communities.

The project would generate a small number of vehicle trips to the site. These trips include workers, material, and equipment deliveries. It is unlikely that the addition of vehicle trips from the project would result in a significant contribution to the traffic density on any roadway in the vicinity of the project site. The project's traffic volume impact would not have a significant cumulative contribution to the traffic density for the local EJ community and the general population.

Asthma

This indicator is a representation of an asthma rate. It measures the number of emergency department (ED) visits for asthma per 10,000 people over the years 2015 to 2017. The information was collected by the California Office of Statewide Health Planning and Development (OSHPD).

Table 4.21-5 shows census tract 06085503601 was the highest. It was at the 73.54 percentile in the Asthma category. This indicates the number of ED visits for asthma per 10,000 people over the years 2015 to 2017 are higher than 73.54 percent of tracts statewide. Census tract 06085501600 was slightly lower, at the 72.98 percentile, followed by Census tract 6085501102 (69.65), 6085500100 (66.59), and 6085501401 (60.99). This indicates that these five communities have the above average numbers of ED visits due to asthma compared to the rest of the state. On the contrary, the rest of the census tracts were lower than the state average for asthma ED visits.

According to the results of the health risk assessment conducted for the project in **Section 4.3 Air Quality**, impacts associated with emissions from the project construction and readiness testing and maintenance activities (diesel-fueled equipment) would be less than significant and would not have a significant cumulative contribution to asthma ED visits. The project's emissions would not have a significant cumulative contribution to asthma ED visits for the local EJ community and the general population.

Low Birth Weight Infants

This indicator measures the percentage of babies born weighing less than 2500 grams (about 5.5 pounds) out of the total number of live births over the years 2009 to 2015. The information was collected by the California Department of Public Health (CDPH).

Table 4.21-5 shows that among these census tracts, two are higher than the 90th percentile. They are 98.85 and 91.34 (in census tracts 06085504602 and 06085501600, respectively), meaning these two are higher than 98.85 and 91.34 percent of the census tracts in California. This indicates that these two communities had above average numbers of low birth weight infants.

However, staff's health risk assessment for the project was based on a highly conservative health-protective methodology that accounts for impacts on the most sensitive individuals in a given population. According to the results of the assessment, the risks at the nearest sensitive receptors (i.e. Maximum exposed individual sensitive receptor [MEIS] and Maximum exposed individual residential receptor [MEIR]) are below health-based thresholds. Therefore, the toxic emissions from the project would not cause significant health effects for the low birth weight infants in these disadvantaged communities, or have a significant cumulative contribution to these disadvantaged communities. The project's emissions would not have a significant cumulative contribution to low birth weight infant births for the local EJ community and the general population.

Cardiovascular Disease

This indicator represents the rate of heart attacks. It measures the number of ED visits for acute myocardial infarction (AMI) (or heart attack) per 10,000 people over the years 2015 to 2017.

Table 4.21-5 shows census tract 06085503601 was at the 53.39 percentile in the Cardiovascular Disease category. This indicates the number of ED visits for AMI per 10,000 people over the years 2015 to 2017 is higher than 53.39 percent of tracts statewide. This is the only census tract which has the above average number of ED visits for AMI compared to the rest of the state. Other census tracts were all below the average.

According to the results of the health risk assessment conducted for the project in **Section 4.3 Air Quality**, impacts associated with emissions from construction and operation activities would be less than significant and would not have a significant cumulative contribution to cardiovascular disease. The project's emissions would not have a significant cumulative contribution to cardiovascular disease for the local EJ community and the general population.

Cultural and Tribal Cultural Resources

No Impact. The CEC staff did not identify any Native American environmental justice populations that either reside within six miles of the project or that rely on any subsistence resources that could be impacted by the proposed project.

Hazards and Hazardous Materials

Less Than Significant Impact. EJ populations may experience disproportionate hazards and hazardous materials impacts if the storage and use of hazardous materials within or near EJ communities occur to a greater extent than within the community at large. A disproportionate impact upon the EJ population resulting from the planned storage and use of hazardous materials on the site is extremely low. Diesel fuel to run the emergency generators is the hazardous material that the project site would have in greatest quantity. The total quantity would be divided and stored in many separate double-walled fuel tanks (one for each generator) with proper spill controls. Therefore, the likelihood of a spill of sufficient quantity to impact the surrounding community and EJ population would be very unlikely, thus the impact on the EJ community would be less than significant.

Hydrology and Water Quality

Less Than Significant Impact. A disproportionate hydrologic or water quality impact on an EJ population could occur if the project would contribute to drinking water degradation, exacerbate groundwater contamination, or discharge additional pollutants to impaired surface water bodies. Since the overall CalEnviroScreen score reflects the collective impacts of multiple pollutants and factors, staff examined the individual contributions to indicators as they relate to hydrology and water quality. The pollutants

of concern in this analysis are those from construction and operational activities. The CalEnviroScreen scores for the disadvantaged community census tracts in a six-mile radius of the project (see **Figure 4.21-1**) are presented in **Table 4.12-4** for each of the following environmental stressors that relate to hydrology and water quality: Drinking Water Contaminants, Groundwater Threat, and Impaired Water Bodies. The percentile for each disadvantaged census tract reflects its relative ranking among all of California's census tracts.

CalEnviroScreen assigns a score to each type of stressor. To assess the impact of a stressor on the population within a census tract, the score is assigned a weighting factor that decreases with distance from the census tract. For stationary stressors related to hydrology or water quality, the weighting factor diminishes to zero for distances larger than 1,000 meters (0.6 miles). As **Figure 4.21-1** shows, all but one of the assessed census tracts are more than 1,000 meters away from the project. The proposed project site is located within census tract 6085505202; therefore, this analysis focuses on that census tract.

Drinking Water Contaminants

Low-income and rural communities, particularly those served by small community water systems, can be disproportionately exposed to contaminants in their drinking water. CalEnviroScreen aggregates drinking water quality data from the California Department of Public Health, the U.S. EPA, and the California State Water Resources Control Board (SWRCB). The score provided by the Drinking Water Contaminant metric calculation is intended to rank water supplies relative to their history or likelihood to provide water that exceeds drinking water standards.

Census tract 6085505202 scored 50 percent in the Drinking Water Contaminants category (see **Table 4.21-4**). This indicates the drinking water contamination threat in this census tract is moderate, and that the community does not have a significant level of exposure to contaminants through drinking water. The project would not be expected to contribute significantly to drinking water source degradation. The project would be required to comply with the Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act by controlling the discharge of pollutants during its construction and operation phases. In addition, the majority of drinking water is supplied from surface water sources, such as Hetch Hetchy, from outside of the area. The project would implement modern storm water and containment controls that would improve upon the site's potential to release contaminants to the environment. The project's hydrology and water quality impacts would be reduced to less than significant for the census tract of concern and the general population.

Groundwater Threats

Common groundwater pollutants found at contaminant release sites in California include gasoline and diesel fuels; chlorinated solvents and other volatile organic compounds; heavy metals such as lead, chromium and arsenic; polycyclic aromatic hydrocarbons;

persistent organic pollutants like polychlorinated biphenyls and pesticides; and perchlorate. CalEnviroScreen aggregates data from the SWRCB's GeoTracker website about groundwater threats. The score provided by the Groundwater Threat metric calculation is intended to rank the relative risk of environmental impact by groundwater contamination, within each census tract.

Census tract 6085505202 scored 98 percent in the Groundwater Threat category (see **Table 4.21-4**). This indicates that the community is located alongside a high proportion of groundwater threats and is within the top 10 percent of tracts statewide.

The project would not be expected to exacerbate groundwater contamination, relative to existing conditions. The project would be required to comply with the CWA by controlling the discharge of pollutants during its construction and operation phases. The project would implement modern storm water and containment controls that would improve upon the site's potential to release contaminants to groundwater. The project would therefore not be expected to degrade groundwater quality any further than baseline conditions. The project's hydrology and water quality impacts would be reduced to less than significant for the census tract of concern and the general population.

Impaired Water Bodies

Rivers, lakes, estuaries, and marine waters in California are important for many different uses. Water bodies used for recreation may also be important to the quality of life of nearby residents if subsistence fishing is critical to their livelihood. Water bodies also support abundant flora and fauna. Changes in aquatic environments can affect biological diversity and the overall health of ecosystems. Aquatic species important to local economies may be impaired if the habitats where they seek food and reproduce are changed. Additionally, communities of color, low-income communities, and tribes generally depend on the fish, aquatic plants, and wildlife provided by nearby surface waters to a greater extent than the general population. CalEnviroScreen aggregates data from the SWRCB's Final 2012 California Integrated Report (CWA Section 303(d) List / 305(b) Report). The score provided by the Impaired Water Bodies metric calculation is intended to rank the relative risk of impaired water bodies within each census tract.

Census tract 6085505202 scored 33 percent in the Impaired Water Bodies category (see **Table 4.21-4**). This indicates the threat to impaired water bodies in this census tract is low, and that there is not a significant impact to the community and local wildlife.

The project would not be expected to further impair local water bodies. The project would be required to comply with the CWA by controlling the discharge of pollutants during its construction and operation phases. The project would implement modern storm water and containment controls that would improve upon the site's potential to release contaminants to the environment. The project's hydrology and water quality impacts would be reduced to less than significant for the census tract of concern.

Land Use and Planning

Less Than Significant Impact. The project site has a General Plan land use designation of High Intensity Office/Research and Development (R&D) and a zoning designation of Light Industrial. The General Plan land use designation of High Intensity Office/R&D does not allow stand-alone data centers and is inconsistent with the site's zoning designation of Light Industrial. Due to the inconsistency between the site's General Plan designation and zoning designation, City of Santa Clara (City) staff recommended that the project owner apply with the City for a General Plan amendment to change the project site's General Plan land use designation to Light Industrial, which allows stand-alone data centers and is consistent with the site's zoning designation of Light Industrial.

While the City's Light Industrial General Plan designation lists stand-alone data centers as an allowed use, the Light Industrial zoning designation does not mention data centers as either an allowed or prohibited use (Santa Clara 2023, Section 18.48.030). Section 18.48.040 of the Zoning Code provides for allowance of "other uses not normally permitted, but that are… appropriate for an industrial area" with City approval of a conditional use permit (CUP) (Santa Clara 2023, Section 18.48.040(e)(2)). The City has permitted stand-alone data centers in the Light Industrial zoning district in the past, and the General Plan land use designation of Light Industrial lists stand-alone data centers as an allowed use. Regarding the conditional use permit process, the Zoning Code further states: "Such use permits shall not be granted if the proposed use or structure would be objectionable or detrimental to adjacent properties or to the industrial area in general by reason of traffic, parking, noise, inappropriate design, or signs" (Santa Clara 2023, Chapter 18.48.040). Therefore, the City considers nuisance impacts in their CUP process. Staff has not identified any project-generated nuisances which would cause significant environmental impacts. (See **Sections 4.1 Aesthetics**, **4.3 Air Quality**, **4.9 Hazards and Hazardous Materials**, **4.13 Noise**, and **4.17 Transportation** of this environmental impact report for more information.) A data center could be allowed on the project site with the City's issuance of a CUP.

With the City's approval of a General Plan amendment to the Light Industrial land use designation, and with the City's issuance of a CUP for the project, the project would be consistent with the description of uses allowed under the site's General Plan and zoning designations. The project would not conflict with land use plans or policies such that significant environmental impacts would occur. The impact would be less than significant, including potential disproportionate impacts on an EJ population.

Noise

Less Than Significant Impact. EJ populations may experience disproportionate noise impacts if the siting of unmitigated industrial facilities occurs within or near EJ communities to a greater extent than within the community at large. The project site is within an area having an EJ population. The area surrounding the site is primarily industrial uses. The closest sensitive receptors are residences located approximately 500

feet to the south of the project site. The Caltrain corridor separates the project from these residences.

Construction would not occur on Sundays and holidays, in compliance with the Santa Clara City Code, section 9.10.230. Construction activities would increase the ambient noise levels by up to 8 A-weighted decibels (dBA). This is less than 10 dBA and would likely have a less-than-significant impact. Additionally, the elevated noise levels from construction activities would be lower than those from passing trains along the Caltrain corridor. Passing trains intermittently elevate noise levels at these residences by a maximum noise level, L_{max}, up to 83 $dBAL_{eq}$[6] at this location. In addition, the City would require a series of performance standards, as part of their condition of approval for construction. These performance standards are ultimately used as a backstop measure to address any noise impacts that might be perceived by the community.

Sources of operational noise for the project would include the backup generators, rooftop mechanical equipment including heating, ventilation, and air conditioning (HVAC) and other equipment necessary for project operation. The City's General Plan Policy (Section 5.10.6) requires existing and new industrial development to reduce the effects of operational noise on adjacent properties through compliance with noise standards in the City's Municipal Code (Section 9.10.040). Since the project is near residential land use, noise reduction measures, such as mechanical equipment enclosures and parapet walls, would be required (incorporated in the operational noise modeling). Thus, the operational noise levels would comply with the City's noise limits and would not elevate the existing ambient noise levels at the nearest residences.

Thus, the project's construction and operational noise impacts would be less than significant for all the area's population, including the EJ population.

Population and Housing

Less Than Significant Impact. Because the study area used in this analysis for impacts related to population influx and housing supply includes Campbell, Cupertino, Milpitas, San Jose, Santa Clara, Sunnyvale, and Santa Clara County, staff considered the project's population and housing impacts on the EJ population living in these geographic areas.

The potential for population and housing impacts is predominantly driven by the temporary influx of non-local construction workers seeking lodging closer to a project site. For the project, the construction workers would be drawn from the greater Bay Area and thus would not likely seek temporary lodging closer to the project site. Operation of the project would require 33 to 35 people working in the building on an average day. If the operations workers relocate closer to the project site, there would be sufficient housing in the project area.

6 L_{eq} is a measurement of average energy level intensity of noise over a given period of time.

A population and housing impact could disproportionately affect an EJ population if the project were to displace minority or low income residents from where they live, causing them to find housing elsewhere. If this occurs, an EJ population may have a more difficult time finding replacement housing due to racial biases and possible financial constraints. As the project would not displace any residents or remove any housing, there would be no disproportionate impact to EJ populations from this project.

Transportation

Less Than Significant Impact. Reductions in transportation options may significantly impact EJ populations. In particular, an impact to bus transit, pedestrian facilities, or bicycle facilities could cause disproportionate impacts to low-income communities, as low-income residents more often use these modes of transportation. Construction of the project may require temporary closure of pedestrian facilities. In the event of any type of closure, clear signage (closure and detour signs) would be provided to ensure vehicles, pedestrians and bicyclists could reach their intended destinations safely. Construction and operation of the project would contribute to the fulfillment of pedestrian plans by widening sidewalks along the project frontage thus, improving the surrounding alternative transportation infrastructure. As concluded in **Section 4.17 Transportation**, all transportation impacts, including impacts to alternative modes of transportation, would be less than significant and therefore would cause less than significant impacts to EJ populations. Likewise, transportation impacts would not be disproportionate.

Utilities and Service Systems

Less Than Significant Impact. A disproportionate utilities and service systems impact on an EJ population could occur if the project would contribute to or exacerbate the effects of cleanup sites, hazardous waste generators and facilities, and solid waste facilities.

Since the overall CalEnviroScreen score reflects the collective impacts of multiple pollutants and factors, staff examined the individual contributions to indicators as they relate to wastes addressed under utilities and system services. The wastes of concern in this analysis are those from construction and operational activities. The handling and disposal of each type of waste is dependent on the hazardous ranking of its constituent materials. Existing laws, ordinances, regulations, and standards ensure the desired handling and disposal of waste materials without potential public or environmental health impacts. The CalEnviroScreen scores for the disadvantaged community census tracts in a six-mile radius of the project (see **Figure 4.21-1**) are presented in **Table 4.21-4** for each of the following environmental stressors that relate to waste management: cleanup sites, hazardous waste generators and facilities, and solid waste facilities. The percentile for each disadvantaged census tract reflects its relative ranking among all of California's census tracts. A disproportionate waste management impact on an EJ population could occur if project wastes impacted the disadvantaged community.

CalEnviroScreen assigns a score to each category of stressors. To assess the impact of a stressor on the population within a census tract, the score is assigned a weighting factor

that's inversely proportional to the distance from the census tract. As **Figure 4.21-1** shows, all but one of the assessed census tracts are more than 1,000 meters away from the project. The proposed project site is located within census tract 6085505202; therefore, this analysis focuses on that census tract.

Cleanup Sites

This indicator is calculated by considering the number of cleanup sites including Superfund sites on the National Priorities List, the weight of each site, and the distance to the census tract. Sites undergoing cleanup actions by governmental authorities, or by property owners, have suffered environmental degradation due to the presence of hazardous substances. Of primary concern is the potential for people to come in contact with these substances.

Census tract 6085505202 scored 99.85 percent in the Cleanup Sites category (see **Table 4.21-4**). The contamination threats due to the presence of cleanup sites in this census tract are among the highest of all tracts statewide and indicate that the communities within are located alongside a high relative proportion of cleanup sites.

If there is any existing contamination at the project site it would be remediated by the current owner in accordance with regulatory requirements that would ensure there would be no impacts to on- or off-site receptors. In addition, the project owner would have to comply with appropriate laws, ordinances, regulations, and standards that would require additional cleanup of contaminated soils and groundwater that might be encountered during construction and operation activities. Therefore, the project would not be expected to contribute significantly to effects from cleanup sites for the relevant census tract and for the general population.

Hazardous Waste Generators and Facilities

This indicator is calculated by considering the number of permitted treatment, storage, and disposal facilities (TSDFs) or generators of hazardous waste, weighted by a factor of each generator or site, and the distance to the census tract. Hazardous waste must be transported by the hazardous waste generators to permitted TSDFs by registered hazardous waste transporters. Shipments must be accompanied by a hazardous waste manifest. There are widespread concerns for both human health and the environment from sites that process and dispose of hazardous waste. Newer facilities are designed to prevent the contamination of air, water, and soil from hazardous materials. However, even newer facilities may negatively affect perceptions of surrounding areas in ways that have economic, social, and health impacts.

Census tract 6085505202 scored 98.37 percent in the Hazardous Waste Generators and Facilities category (see **Table 4.21-4**). The threats related to hazardous waste generation and facilities in this census tract are among the worst of all tracts statewide, meaning that the communities in the subject tract are located alongside sites with a high relative proportion of hazardous waste generators and facilities.

The project would not be expected to contribute significantly to hazardous waste generation or to the number or size of facilities handling hazardous waste processing. Further, the project would be required to comply with appropriate laws, ordinances, regulations, and standards to control the storage and disposal of hazardous waste during its construction and operation phases. The project would implement modern controls to prevent or minimize the generation of hazardous wastes and to dispose of them in a manner that would avoid or reduce impacts on the environment both during project construction and operation. The project's impacts related to hazardous waste generation and disposal would be reduced to less than significant for the relevant census tract and the general population.

Solid Waste Facilities

This indicator is calculated by considering the number of solid waste facilities including illegal sites, the weighting factor of each, and the distance to a census tract. Newer solid waste landfills are designed to prevent the contamination of air, water, and soil with hazardous materials. However, older sites that are out of compliance with current standards or illegal solid waste sites may degrade environmental conditions in the surrounding area and pose a risk of exposure. Other types of facilities, such as composting, treatment, and recycling facilities may raise concerns about odors, vermin, and increased traffic.

Census tract 6085505202 scored in the 95th percentile for the Solid Waste Facilities category (see **Table 4.21-4**). This indicates that the number and type of facilities within or nearby this census tract and the environmental deterioration due to their presence are among the highest of all tracts statewide.

Solid waste generated during the construction and operation of the project would be segregated, where practical, for recycling, and would be disposed of where there is adequate capacity for non-hazardous waste. Also, the project would be required to develop and implement plans that would ensure proper disposal of nonhazardous waste at appropriately licensed facilities. The project owner would use solid waste sites or facilities that are verified to be in compliance with current laws, ordinances, regulations, and standards. In addition, there would be no increase in solid waste generators and facilities in the area due to project construction or operation because there is adequate capacity to dispose of waste from the project. Therefore, there would be no significant impact related to solid waste facilities that would disproportionately impact an EJ community in the relevant census tract.

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Section 5

Alternatives

5 Alternatives

5.1 Introduction

This section evaluates alternatives to the Bowers Data Center (BDC), which includes the Bowers Backup Generating Facility (BBGF). The BBGF would provide backup electricity to the BDC only if electricity cannot be supplied from Silicon Valley Power (SVP) and delivered to the BDC. The BDC's emergency backup generators, or gensets, would use renewable diesel as the primary fuel with ultra-low sulfur (conventional) diesel as the secondary backup fuel if renewable diesel is unavailable (GI Partners 2023d).

Alternatives initially considered and not evaluated further, primarily due to reliability issues, include two fuel cell technologies, two standalone battery energy storage systems (lithium-ion and flow batteries), and a tandem battery storage system.

In addition to the No Project/No Build Alternative (Alternative 1), the California Energy Commission (CEC) staff (staff) fully analyzed and compared the Natural Gas Internal Combustion Engine Alternative (Alternative 2) to the BDC (or proposed project).

5.2 CEQA Requirements

The California Environmental Quality Act (CEQA) Guidelines require that an Environmental Impact Report (EIR) consider and discuss alternatives to the proposed project (Cal. Code Regs., tit. 14, § 15000 et seq.). Section 15126.6 of the CEQA Guidelines provides that the alternatives analysis must:

- describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project;
- evaluate the comparative merits of the alternatives;
- focus on alternatives that would avoid or substantially lessen any significant effects of the project, even if these alternatives would impede to some degree attainment of the project objectives, or would be more costly; and
- describe the rationale for selecting alternatives to be discussed and identify alternatives that were initially considered but then rejected from further evaluation.

CEQA requires that an EIR "consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (Cal. Code Regs., tit. 14, § 15126.6, subd. (a)). Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are failure to meet most of the basic project objectives, infeasibility, or inability to avoid significant environmental impacts (Cal. Code Regs., tit. 14, § 15126.6, subd. (c)). The range of potentially feasible alternatives selected for analysis is governed by a "rule of reason," requiring evaluation of only those alternatives "necessary to permit a reasoned choice" (Cal. Code Regs., tit. 14, § 15126.6, subd. (f)).

An EIR is not required to consider alternatives that are infeasible (Cal. Code Regs., tit. 14, § 15126.6, subd. (a)). In addressing feasibility of alternatives, factors that may be taken into account are site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (Cal. Code Regs., tit. 14, § 15126.6, subd. (f)(1)). An EIR "need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (Cal. Code Regs., tit. 14, § 15126.6, subd. (f)(3)).

The lead agency is also required to evaluate the "no project" alternative along with its impact. Analyzing a no project alternative allows decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (Cal. Code Regs., tit. 14, § 15126.6, subd. (e)(1)). "The 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (Cal. Code Regs., tit. 14, § 15126.6, subd. (e)(2)).

5.3 Project Objectives and Alternatives Screening

The ideal process to select alternatives to include in the analysis begins with the establishment of project objectives. Section 15124 of the CEQA Guidelines addresses the requirement for an EIR to contain a statement of objectives, as follows:

A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project and may discuss the project benefits.

The applicant's purpose for the BDC is to provide customers with mission critical space to support its servers, including space conditioning and a steady stream of high-quality power supply (GI Partners 2022a). The applicant's key objectives are to incorporate the most reliable and flexible form of backup electric generating technology into the BBGF considering reliability, commercial availability and feasibility, and technical feasibility.

The applicant's project objectives are as follows:

- Develop a state-of-the-art data center large enough to meet projected growth.
- Develop the data center on land that has been zoned for data center use at a location acceptable to the City of Santa Clara.
- Incorporate the most reliable and flexible form of backup electric generating technology into the BBGF 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 BBGF must provide a higher reliability than 99.999 percent in order for the BDC to achieve an overall reliability of equal to or greater than 99.999 percent reliability.
  - The BBGF must provide reliability to the 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 selected backup electric generation technology must include engineering methods, procedures, and equipment that have been achieved in practice.
  - The BDC must have onsite 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 use systems that are compatible with one another and be maintainable in a reasonable fashion achieving timely switch outs, repairs, and maintenance. Warranty and support must be within practical means to achieve optimum uptime during failures within the utility power supply.

5.4 Reliability and Risk Factors

The most important data center criterion is reliability. Crucial services such as the 911, state offices of emergency management, and utilities infrastructure are increasingly using data centers for their operation. The selected backup electric generation technology must be extremely reliable in the case of an emergency loss of electricity from the utility. Data center customers demand the most reliable data storage service available, and data center insurers are willing to invest only in proven technologies with extremely low probability of operational failure.

Any alternative backup generation technology would be measured against proven available technologies such as that proposed for the BBGF. Should the reliability of an alternative technology not match that of the proposed technology, it would not be considered a viable alternative.

Risk factors that affect the reliable operation of backup generators include the following: failure to start, failure to run due to various technical issues, and failure to run due to lack of fuel supply (NREL 2019). Any alternative technology must have proven operational

hours, a reliable source of fuel supply, and redundancy capabilities. Sufficiently mitigating these risks would ensure that data center operation is not interrupted during a power utility failure.

The analyses in subsections "5.6 Alternatives Considered and Not Evaluated Further" and "5.7 Alternatives Selected for Analysis and Comparison to the Proposed Project" below, assess the reliability issues of the fuel and technology alternatives.

5.5 Environmental Impacts of the Proposed Project

This EIR evaluates the environmental impacts of implementing the proposed project. One of the purposes of an alternatives analysis is to consider alternatives that would avoid or lessen the significant effects of a project. For the BDC project, staff recommends mitigation measures to reduce significant impacts to less-than-significant levels. No significant and unavoidable environmental impacts have been identified. Project impacts and staff's recommended mitigation measures are summarized as follows:

- **Air Quality** – Mitigation measure **AQ-1** would reduce air quality impacts during project construction. This measure requires the incorporation of the local air district's best management practices to control fugitive dust. This measure also incorporates exhaust control measures to reduce emissions from construction equipment. During readiness testing and maintenance, the oxides of nitrogen (NOx [as an ozone precursor]) emissions of the standby generators would be fully offset through the permitting process with the Bay Area Air Quality Management District (BAAQMD). With the implementation of **AQ-1** during construction and NOx offsets for readiness testing and maintenance through BAAQMD's permitting requirements, the project would not cause a cumulatively considerable net increase of any criteria air pollutant, and impacts would be reduced to less than significant with mitigation incorporated.
- **Biological Resources** – The proposed project area has the potential to support nesting for a suite of common birds that are protected by federal, state, and local laws, policies, and regulations. Removal of the existing office building and trees from the project site could cause direct impacts on nesting birds and raptors if that work occurred during the nesting season. Direct impacts on active roosts of protected or common bats could also occur. Mitigation measure **BIO-1** requires nesting bird surveys to be conducted before starting any construction activities during the nesting period. If active nests are detected, additional measures are required. Mitigation measure **BIO-2** requires preparation and implementation of a Bat Mitigation and Monitoring Plan; and it requires bat clearance surveys prior to building demolition or tree removal. Implementation of **BIO-1** and **BIO-2** would reduce potential impacts on protected wildlife species, including raptors, migratory birds, and bats, to less than significant.
- **Cultural and Tribal Cultural Resources** – Mitigation measure **CUL-1** requires that a qualified archaeologist prepare a Cultural Resources Identification, Monitoring, and Treatment Plan in consultation with the Tamien Nation and a qualified Native American monitor, to ensure that potential impacts on any as-yet unidentified cultural

resources are reduced to a less-than-significant level. **CUL-2** requires qualified specialists and Native American monitors to prepare and implement a workforce environmental awareness program, or WEAP, in conjunction with Tribal Cultural Resources Sensitivity training, to instruct construction workers of the obligation to protect and preserve buried archaeological and Native American resources that could be encountered during construction. It includes instructions regarding the need to halt work in the vicinity of potential archaeological and Native American resources that could be encountered. Mitigation measure **CUL-3** requires that a preliminary field investigation be conducted by a qualified archaeologist and Native American monitor to determine if cultural deposits are present, once pavement is removed and soils are accessible for inspection. **CUL-4** requires that all ground disturbing activities be completed under the observation of a qualified archaeologist and Native American monitor, and provides for the cultural resources monitors to have the authority to temporaily halt construction activities within a 50-foot radius of finds. **CUL-5** specifies the procedures for documenting and evaluating cultural resources finds made during the preliminary field investigation, grading, or other construction activities. Further, **CUL-5** requires that a qualified archaeologist make recommendations to the Santa Clara Director of Community Development regarding data recovery, curation or other appropriate mitigation.

Mitigation Measure **CUL-6** specifies procedures in the event that human remains are discovered. **CUL-7** affords for the installation of security fencing onsite, to avoid destruction or theft of potential cultural resources, at the discretion of the Santa Clara Director of Community Development, and requires the qualified archaeologist and Native American monitor to advise the Director of Community Development on security measures to be taken to ensure the safety of any cultural resources. **CUL-8** requires that the project owner or its representative prepare a closing cultural resources report summarizing the results of the field investigations, data recovery activities and results, and compliance with the Cultural Resources Identification, Monitoring, and Treatment Plan once all analyses and studies required have been completed. **CUL-9** requires that all archaeological cultural resources recovered and not identified as tribal cultural resources be transferred to a long-term curation facility, and all Native American/tribal cultural resources and artifacts be reburried onsite, if feasible and if requested by the Native American representative. Combined, mitigation measures **CUL-1** through **CUL-9** would reduce potential impacts on buried historical resources to a less-than-significant level.

- **Geology and Soils** – Disturbance of paleontological resources could occur during construction activities requiring earth moving, including grading, trenching, excavation for foundations, and installation of support structures, where native soil would be disturbed. Mitigation measure **GEO-1** requires the applicant to secure the services of a qualified professional paleontologist to teach site workers on required actions in the event of encountering a suspected fossil. If a fossil is encountered, the qualified paleontologist will develop and implement an excavation and salvage plan in accordance with professional standards. Implementation of mitigation measure **GEO-**

1 would reduce potential impacts on unique paleontological resources to a less-than-significant level.

- **Greenhouse Gas Emissions** – Greenhouse gas (GHG) emissions from project operation would consist of direct, "stationary source," emissions from routine readiness testing and maintenance of the emergency backup generators. Indirect and "non-stationary source" GHG emissions would come from offsite vehicle trips for worker commutes, materials delivery, and other project activities. Mitigation measure **GHG-1** requires the applicant to use renewable diesel for 100 percent of total energy use by the emergency backup generators, and only use ultra-low sulfur diesel as a secondary fuel in the event of supply challenges or a disruption in obtaining renewable diesel. **GHG-2** requires the applicant to participate in SVP's Large Customer Renewable Energy Program or other renewable energy program to accomplish the objective to achieve 100 percent carbon-free electricity for electricity accounts associated with the project. Alternatively, the applicant could purchase renewable energy credits or similar instruments to accomplish the same goal of 100 percent carbon-free electricity for the project. With implementation of mitigation measures **GHG-1** and **GHG-2** the project would comply with all statewide, regional, and local plans, policies, and regulations adopted to reduce GHG emissions. Therefore, the project's GHG emissions would not have a significant direct or indirect impact on the environment.
- **Hazards and Hazardous Materials** – Mitigation measure **HAZ-1** requires sampling and testing of suspect materials in existing buildings on the site for lead-based paint prior to issuance of demolition permits. **HAZ-2** requires preparation and implementation of a Site Management Plan (SMP) to establish procedures and protocols for handling any unknown or remnant contaminated soil or groundwater encountered during construction. **HAZ-2** also requires preparation and implementation of a Health and Safety Plan to protect and educate workers in the event contaminated soil or groundwater is encountered during project work. **HAZ-3** requires testing of soil and groundwater per the protocols developed in the SMP to identify potential soil or groundwater contamination at the site prior to issuance of grading permits. Implementation of mitigation measures **HAZ-1**, **HAZ-2**, and **HAZ-3** would reduce potential impacts on the public and the environment through exposure to hazards and hazardous materials during construction to less-than-significant levels.
- **Transportation** – Project operation would generate vehicle miles travelled (VMT) that would exceed the City of Santa Clara (City) threshold for industrial uses. Mitigation measure **TRANS-1** requires implementing a combination of Transportation Demand Management measures to reduce the project VMT to a level below the City's threshold. Also, the City will ensure project consistency with General Plan policies relating to trip reduction, transit connectivity, and alternative modes of transportation. Implementation of **TRANS-1** would ensure that VMT generated by the project would be less than significant.

5.6 Alternatives Considered and Not Evaluated Further

CEQA provides that the range of alternatives to the proposed project, or to the location of the project, must include those that would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the project's significant effects. CEQA defines feasible as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (Cal. Code Regs., tit. 14, §§ 15126.6, subd. (c), and 15364).

Some of the alternatives initially considered by staff for this analysis were eliminated from detailed consideration due to potential feasibility issues, failure to reduce any significant environmental impacts, or failure to meet most of the project objectives. The subsections that follow discuss why certain technology alternatives could not achieve the level of reliability required to ensure an uninterrupted power supply. (The discussion under the subsection "5.4 Reliability and Risk Factors" above describes reliability and risk factors pertaining to data centers in general.) Staff also discusses the reasons why no alternative project site is evaluated in this EIR.

The following discussions provide staff's reasons for eliminating these alternatives from further analysis and comparison to the proposed project.

5.6.1 Fuel Cell Technology Alternative

Fuel cell technology is an alternative considered but dismissed from further evaluation. Fuel cells convert chemical energy into electrical energy. There are several types of fuel cells, which vary according to the types of electrochemical reactions that take place in the cells, the types of catalysts required, the operating temperature ranges, the fuel requirements, and other factors affecting the applications suitable for the fuel cells.

The most promising types of fuel cells for powering data centers are solid oxide fuel cells (SOFCs) and polymer electrolyte membrane or proton exchange membrane (PEM) fuel cells (Microsoft 2014).

5.6.1.1 Solid Oxide Fuel Cells

SOFCs are electrochemical devices that convert the chemical energy of a fuel and oxidant directly into electrical energy. They operate at high temperatures, as high as 2,100 degrees Fahrenheit. Operating at high temperatures enables the SOFCs to use a variety of fuels to produce hydrogen. SOFCs most commonly use natural gas as fuel but can also use biogas and gases made from coal as fuel (U.S. DOE 2023a). Carbon monoxide (CO) is a product of the chemical reaction created by the fuel and steam molecules. SOFCs are resilient and not susceptible to CO poisoning, which affects the voltage output of other types of fuel cells, such as PEM fuel cells. Due to their resiliency against CO poisoning and because they operate at extremely high temperatures, SOFCs can reform fuel internally. This reduces the cost associated with adding a reformer to the system.

Potential Feasibility Issues. SOFCs are typically configured and more suitable to serve as a prime base load power. eBay's data center in Utah uses thirty 200-kilowatt (kW) SOFCs to provide continuous base load power to the information technology (IT) load (6 megawatts), 8,760 hours per year, with the electric grid as its backup power supply. Additionally, some data centers (e.g., Apple and Equinix) have supplemented their base load power demand (IT and cooling systems) with SOFCs, but they rely on the electric grid to support other loads while retaining traditional uninterruptible power supply (UPS) and generators for emergency power (Data Center Knowledge 2013). However, SOFCs providing power for 100 percent base load demand (i.e., IT and cooling systems) are not yet industry standard for large-scale data centers.

Because it takes time to reach critical operating temperatures, SOFCs have long startup times, sometimes up to 60 minutes (GenCell 2023). Data centers must have a constant electricity supply, with even a momentary outage risking the loss of data; therefore, they require fast startup from their backup power generators. SOFCs also have a slow response to electricity demand (GenCell 2023). This can pose a problem for data centers, as their IT and cooling load demands constantly fluctuate. Cooling must be able to keep the internal temperature of the data center buildings steady for the IT servers' optimal performance and must be able to respond quickly to changes in environmental conditions (such as ambient air temperature and humidity). The rapid changes in electricity demand could outpace the SOFCs' ability to provide the needed backup power supply to a data center.

SOFCs would use the underground natural gas pipeline system for fuel. At least one pipeline connection would be needed to supply the project with natural gas. A second, independent pipeline connection might be needed for redundancy. The project site has two nearby independent gas distribution lines available for connection. (See subsection "5.7.2 Alternative 2: Natural Gas Internal Combustion Engine Alternative" below, for a discussion of nearby natural gas distribution lines.)

5.6.1.2 PEM Fuel Cells

Another potentially suitable fuel cell technology for backup energy generation is PEM fuel cell technology (U.S. DOE 2023a). PEM fuel cells are typically used for low-power applications that require intermittent backup power, such as mobile services or small stationary applications, like backup generators for communication towers. Their power capacity ranges between 10 and 125 kW. However, the technology has expanded to data center applications with fuel cell capacity of up to 1 megawatt (MW) delivered in the size of a 40-foot International Organization for Standardization (ISO) container (Plug Power 2022a). For a 100-MW backup generation system, which is approximately the capacity needed for the BDC, the footprint required for the backup generation system itself would be approximately 32,000 square feet, or 0.73 acre. Should onsite fuel storage be needed, which would be likely, the footprint would further increase.

PEM fuel cells operate at low temperatures and require fuels that are carbon-free and rich in hydrogen content, preferably pure hydrogen, for maximum voltage output and

quick start-up times that a data center generator requires. Hydrogen can be stored onsite via pressure vessels, piped into the site, or made onsite from a methane source, such as natural gas, or from water through electrolysis. These options are discussed in more detail below. Unlike SOFCs, CO poisoning is an important issue for PEM fuel cells because they cannot tolerate large amounts of CO (Fuel Cell Store 2019).

Potential Feasibility Issues. There are potential feasibility issues in using PEM fuel cells for BDC backup generation. Issues involving onsite fuel storage, the lack of pipeline infrastructure, and onsite generation of hydrogen would make it difficult to provide fuel to the PEM fuel cell, as discussed below.

Onsite Fuel Storage

A 1-MW PEM fuel cell consumes approximately 65 kilograms (kg) of hydrogen fuel per hour (Plug Power 2022a). The proposed project would need fuel for a backup duration of up to 24 hours. The amount of hydrogen needed per 1-MW fuel cell for 24 hours of operation would be approximately 1,560 kg.[1] Thus, the project would need approximately 156,000 kg of hydrogen for 100 MW of fuel cells to operate for 24 hours (not including redundant fuel cells).

The simplest way to store large volumes of hydrogen would be to compress it. Hydrogen can be compressed to less than 0.42 percent of its gas volume at atmospheric pressure. The gauge pressure of hydrogen stored as a high-pressure gas is approximately 3,600 pounds per square inch (psi) (U.S. DOE 2001). Compressed hydrogen could be transported and stored onsite on a Type IV trailer, which is approximately 53 feet long, 8.5 feet wide, and 13 feet tall, and would support eight, 25-foot-long hydrogen cylinders with a total capacity of approximately 1,100 kg (Gardner Cryogenics 2022). The project would need approximately 142 trailers and 64,000 square feet, or 1.5 acres, of space onsite to store fuel for 100 MW of fuel cells for up to 24 hours of operation.

Alternatively, the project could construct a storage system that includes one to several pressure vessels to store such a large amount of compressed hydrogen. The project site would need storage for approximately 300,000 cubic feet,[2] or over 7 acre-feet of compressed hydrogen for 100 MW of fuel cells (not including redundant fuel cells). However, due to the amount of compressed hydrogen needed, the storage space required for this amount of compressed hydrogen is not available on the project site.

Hydrogen can also be stored in liquid form, known as liquid hydrogen gas (LHG), to reduce its volume and thus its storage footprint. LHG storage requires a smaller footprint than compressed hydrogen gas for the same hydrogen fuel capacity. LHG could be transported and stored on the same trailer type as compressed hydrogen. However, LHG would have a larger volume of hydrogen capacity, approximately 4,400 kg, stored in a

1 Hydrogen fuel calculation: 65 kg per hour x 24 hours = 1,560 kg of hydrogen per 1-MW fuel cell

2 Compressed Hydrogen fuel conversion calculation: 65 kg per hour x 24 hours x 1/240 compression ratio x 423.3 cubic feet per kg x 100 MW = 275,100 cubic feet for 100 MW fuel cell

single hydrogen cylinder (Gardner Cryogenics 2022). To store the fuel needed for 100 MW of fuel cell capacity for 24 hours of operation, the project would need approximately 36 trailers for LHG storage, which would require 17,000 square feet, or 0.5 acre, of space onsite.

Alternatively, as mentioned above, the project could construct a storage system that includes one to several pressure vessels to store a large amount of LHG. The project would need approximately 80,000 cubic feet, or 2 acre-feet, of LHG for 100 MW of fuel cells (as compared to 300,000 cubic feet, or over 7 acre-feet, for compressed hydrogen gas). However, this amount of space might not be available on the project site.

Although LHG has the benefit of requiring a smaller footprint than compressed hydrogen, problems exist with storing the liquid. LHG would need to be stored and distributed in specialized equipment, including insulated storage tanks, to keep the fuel in liquid state at atmospheric pressure, which requires a temperature of minus 423 degrees Fahrenheit. For LHG to remain at a constant temperature and pressure, it must allow for natural evaporation known as boil-off gas (BOG). BOG is a loss of stored fuel that occurs when the ambient temperature heats the insulated tanks. LHG must release this gas to maintain its liquid state. The release of gas occurs at a rate of approximately 1 percent per day (Army Logistician 2000).

Other constraints exist for both compressed and liquified hydrogen storage systems. Safely managing these systems would require special expertise and equipment, which would add to the cost and complexity of the project. Fuel storage equipment must comply with the standards specified by the National Fire Protection Association along with the Santa Clara City Code (City Code) to protect against hazardous material release, fire, and explosions during natural disasters and as the result of accidents. Additionally, permits for the storage of hazardous materials would be needed pursuant to the City Code. The presence of such storage systems would also likely raise concerns of public safety (for example, due to the flammability of hydrogen) and introduce new compliance and potential safety impacts that would not occur under the proposed project.

Pipeline Infrastructure

Supplying hydrogen to the project through pipelines is another possible way of providing fuel for a PEM fuel cells alternative. For large applications, such as the proposed project, hydrogen would need to be supplied through multiple pipelines to mitigate onsite storage challenges and increase reliability. According to the U.S. Department of Energy (U.S. DOE 2023b), there are approximately 1,600 miles of hydrogen pipeline currently operating in the United States.

Moreover, there are technical concerns related to hydrogen pipeline transmission, including the potential for hydrogen to embrittle the steel and welds used in the pipelines. Hydrogen degrades, fatigues, and reduces fatigue resistance of steel and steel welds. The effects of hydrogen on pipeline would remain significant were it not mitigated. Mitigation measures for hydrogen degradation, fatigue, and fatigue resistance include

increasing pipe wall thickness, reducing loading of pipe caused by fluctuations in operating pressure, or, alternatively, using fiber reinforced polymer (FRP) piping. FRP would be a viable and accepted alternative to steel pipeline for hydrogen transmission, and in 2016 was accepted into the American Society of Mechanical Engineers (ASME) B31.12 Hydrogen Piping and Pipelines code for up to 170 bar (2,465 psi). However, the infrastructure is not yet built to deliver hydrogen to the project site, contributing to the probable infeasibility of delivering hydrogen to the site.

Onsite Generation

Alternatively, hydrogen for PEM fuel cells can be supplied using other methods, such as reforming and electrolysis.

Reforming

Reforming is a process that uses existing fuels with hydrogen content to react with water, which produces hydrogen and carbon oxides as products.

Steam-methane reforming (SMR) is a type of reforming. It is a thermal process, combining steam with a methane source, such as natural gas, to produce hydrogen and carbon oxides. The proposed project currently has access to two natural gas pipelines that could be used for SMR. (See subsection "5.7.2 Alternative 2: Natural Gas Internal Combustion Engine Alternative" below for a discussion of natural gas distribution lines available for connection.) Although SMR is typically used in SOFCs because of the resiliency of the SOFCs' interior components to high levels of CO, it is not suitable for PEM fuel cells. CO can poison the PEM fuel cells' platinum on the electrode, which leads to lower voltage at a given electrical current density (Fuel Cell Store 2019). SMR could produce the desired hydrogen content for PEM fuel cells should further processing to remove undesired levels of CO be performed, or by using a larger PEM fuel cell where the same amount of CO would be spread over a larger electrode.

Methanol reforming, however, is the leading reforming technology candidate for PEM fuel cells because of its high efficiency and energy density (Fuel Cell Store 2019). Methanol is a liquid, like conventional diesel, and can be stored onsite. Methanol is reformed with water to produce hydrogen and carbon oxides.

Both SMR and methanol reforming consume energy during hydrogen production and produce carbon dioxide (CO_2), which is a greenhouse gas emission, that might be released into the atmosphere, leading to greenhouse gas (GHG) impacts. Also, additional equipment for both types of reforming would increase project costs, although comparative cost data is not readily available.

Electrolysis

Electrolysis can also be used to produce the hydrogen needed for PEM fuel cells. It is a promising option for carbon-free hydrogen production, using electricity to cause the chemical reaction of splitting water into hydrogen and oxygen. The reaction takes place in a unit called an electrolyzer. Like fuel cells, electrolyzers consist of an anode and a

cathode separated by an electrolyte. There are different types of electrolyzers mainly due to the different electrolyte materials, such as PEM, alkaline, and solid oxide, but their function is essentially the same—generating hydrogen (U.S. DOE 2023c).

A 1-MW PEM electrolyzer, with an approximate size of a 40-foot ISO container,[3] can generate 18 kg of hydrogen per hour. For a 100-MW system, the footprint required for the system would be 32,000 square feet, or approximately 0.73 acre. For every 1 kg of hydrogen produced, the electrolyzer would need 10 kg of water and 49.9 kilowatt-hour (kWh) of energy (Plug Power 2022b). During a grid outage, the amount of electricity to generate enough hydrogen fuel for 100 MW might not be available, rendering the fuel cell inoperable and a data center without power. Therefore, hydrogen might need to be produced and stored onsite for future use during emergency generation. As discussed above under "Onsite Fuel Storage," onsite storage of hydrogen has feasibility issues, including storage space, boil-off gas (BOG), the need for specialized equipment, and concerns about public safety.

5.6.1.3 Reliability Issues for Fuel Cell Technology – Summary Conclusions

Fuel cells for large-scale backup generation are not fully proven and have various feasibility constraints, including storage space, BOG, the need for specialized equipment, concerns about public safety, and undetermined reliability. Data center customers demand the most reliable data storage service available, as reflected in the applicant's project objectives, which include the development of a highly reliable data center. Securing fuel for the cells and storing it is a challenge requiring specialized expertise and increased costs for installing and maintaining systems that are expected to be used infrequently. Because of the limitations described above, fuel cell technology is not currently a feasible alternative to the project's proposed backup generators.

5.6.2 Standalone Battery Energy Storage Alternative

Batteries store chemical energy and convert it to electrical energy. They are used to supply power for many applications. Batteries come in many different shapes and sizes, and different battery types can have different chemical properties. Batteries provide standby or emergency power and almost instantaneous startup times and are therefore considered suitable for backup power for data centers. There are two types of long duration and large capacity battery systems: lithium-ion battery energy storage systems and flow battery energy storage systems.

5.6.2.1 Lithium-ion Battery Energy Storage Systems

The lithium-ion (Li-ion) battery includes an electrolyte solution (Li-ion), separator, anode, cathode, and two electrical current collectors, that are contained in a single cell. The cells are stacked in huge battery banks, and these large battery banks are called a battery

3 An ISO container is a container which has been built in accordance with the International Organization for Standardization regulations.

energy storage system (BESS). Li-ion batteries have an average monthly round trip efficiency of 82 percent (U.S. EIA 2021).

Data centers currently use smaller UPS systems consisting of Li-ion batteries to ensure a smooth transition from the grid to the gensets while the gensets synchronize to the data centers' electrical busbars.[4] The UPS system proposed for the project is designed to provide up to 5 minutes of backup power at 100 percent load. UPS systems are proven and reliable to support genset start up, but they are currently limited in power supply duration. A BESS would provide higher capacity and support longer outages for data center projects. A BESS can be designed to provide up to approximately 100 MWs of backup power and the quick start times that a data center requires.

A standalone BESS (used as a single and primary backup generation system during grid outages) for a data center's load demands would require ample onsite storage space for long outage durations. To date, a 400-MW/1,600 megawatt-hour (MWh) (supplying 400 MW continuously for 4 hours) BESS is the largest system successfully deployed (Energy Storage News 2022). Until recently, the operational duration of battery systems has been up to 4 hours, not necessarily because battery systems do not have the potential to operate longer, but because a longer duration has not been demonstrated in large-scale data center applications requiring long-duration backup power.

Staff is aware that there was a proposal, the Gilroy Backup Generating Facility (GBGF), for two BESS facilities, each with a capacity of 50 MW and discharge capacity of 640 MWh, for a total capacity of approximately 100 MW and a discharge duration of approximately 13 hours (Amazon Data Services 2021). The GBGF was designed to include diesel-fired gensets to support the data center when the batteries were fully discharged and further backup generation was needed, prior to the electrical grid being restored. However, this project has since been canceled and the application has been withdrawn from the CEC proceedings. The project has since been refiled with the City of Gilroy, to include two phases of construction. Phase I would be 49 MW of capacity using 25, 2.5-MW diesel gensets. Phase II would be 50 MW capacity, with potentially a backup generation technology with either a 13-hour duration BESS or fuel cells. Phase II construction would occur within 4 to 7 years of Phase I based on customer demand. Currently, long duration batteries and large-scale fuel cells have not been technologically feasible for data center backup generation (Amazon Data Services 2022).

Potential Feasibility Issues. The employment of a standalone BESS as an alternative to the BBGF would be the first application of this technology for a project of this magnitude for long durations. The BBGF would require storing fuel onsite for approximately 24 hours of backup generation. A 4-MWh battery storage container requires approximately 380 square feet of space. To supply approximately 100 MW of uninterruptable power in case of 24 hours of grid outage, a standalone BESS alternative would need a 2,400-MWh battery system, assuming a 100-percent charging and

4 In electric power distribution, a busbar is a metallic strip or bar used to connect high voltage equipment at electrical switchyards, and low voltage equipment in battery banks.

discharging scenario. This translates to approximately 5 acres of battery storage space needed. The storage space requirement could multiply up to six times for the project to meet its backup generation duration requirement. This footprint could be reduced by stacking the batteries on top of each other; however, the stacked height would be limited. The stacked containers would need to be constructed such that they could be readily accessible for maintenance and potential fire response, while mitigating seismic concerns. Alternatively, the batteries could be stored in multi-story frame structures or buildings to reduce their footprint, but they would then be subject to stricter Building Code fire protection requirements. The added challenge of configuring the batteries to fit the site and meet regulatory requirements would also increase the project cost.

Whether the batteries are single-stacked, double-stacked in containers, or stored in a building, the risk of fires, typically caused by thermal runaway is a potential problem for Li-ion battery systems. Thermal runaway begins when the heat generated within a battery exceeds the amount of heat dissipated to its surroundings. The excess heat can cause components within the battery cell to fail, leading to the Li-ion electrolyte in the anode and cathode to mix—Li-ion is flammable. If the cause of the excessive heat generated is not remedied through heat transfer, the condition will worsen. The internal battery temperature will continue to rise, causing the battery current to rise, thereby creating a domino effect. The rise in temperature in a single battery will begin to affect other batteries in its proximity, and the pattern will continue, thus the term "runaway" (Mitsubishi 2023). There are extensive mitigations, codes and standards, and a comprehensive regulatory framework in place that applies to battery storage to ensure a standard level of reliability for facility operations. However, even with these mitigations in place, risks such as thermal runaway could affect the reliability of the data center and increase the chance that data could be lost. Loss of data would be very disruptive for an operation whose topmost goal is protecting data against loss and guaranteeing continuous and uninterruptable access to data. Furthermore, if a single cell or cluster of the battery system fails, the entire project might be shut down for investigation.

Another constraint of a standalone BESS is that once discharged, the batteries would require power to recharge. The only way they can be recharged without onsite generation is if the utility electrical system is back up and running. Since it is not possible to predict the duration of an electricity outage, batteries are not a viable option for emergency electrical power. Finally, because batteries have a finite lifespan, they would probably have to be replaced at least once during the life of the project. This would add to the project's cost by an unknown but potentially considerable amount.

5.6.2.2 Flow Battery Energy Storage Systems

Alternatively, the flow battery is another type of battery energy storage system. The flow battery, also called redox (reduction-oxidation) battery, includes two external tanks containing an anode and cathode electrolyte solution. The electrolyte solutions are aqueous and non-flammable, which pose no fire risks separately or when mixed. The solutions are pumped through the electrode flow cell(s) where electrodes extract electrons and electricity is generated.

Many different electrolyte solutions are used in the flow battery system and paired as such: vanadium/vanadium, iron/chromium, iron/water, or zinc/bromine. However, in battery systems that use zinc/bromine the zinc is deposited on the electrode, and these systems are known as hybrid flow battery systems.

Flow batteries are currently capable of discharging power for up to 8 hours. They can be designed to discharge for more than 8 hours by increasing the volume of electrolyte being stored.

Flow batteries have a round trip efficiency of between 38 and 75 percent and are designed for utility-scale applications to support peak electricity demand. In addition, flow batteries have a lifespan of at least 20 years.

Potential Feasibility Issues. Similar to the Li-ion BESS, the employment of a standalone flow battery system as an alternative to the BBGF would be the first application of this technology for a project of this magnitude for long durations. The BBGF would require storing fuel onsite for approximately 24 hours of backup generation. To supply approximately 100 MW of uninterruptable power in case of 24 hours of grid outage, a standalone flow battery alternative would need a 2,400-MWh battery system, assuming a 100 percent charging and discharging scenario. This translates to 25 acres or more of battery storage space needed, depending on the flow battery technology and manufacturer. This amount of storage space is not available on the project site.

Like Li-ion battery systems, once discharged, flow batteries would require power to recharge. This battery's maximum 8-hour duration would not meet the project's requirement of 24 hours of continuous backup electricity. Further design considerations would be needed for a standalone BESS to potentially replace the proposed project's diesel-fired gensets.

5.6.3 Tandem Battery Energy Storage Alternative

Staff considered a battery energy storage system in tandem (tandem BESS) with the proposed project's renewable diesel-fired gensets. A tandem solution proposal would not be the first of its kind for a data center application, as previously mentioned. Such an option would allow the batteries to act as primary backup power for short outage durations, while the project's 39 diesel-fired gensets would provide backup power when outages are longer in duration and the batteries have been discharged.

For this project, staff assumes a tandem solution would include an approximately 100-MW-capacity BESS with a discharge duration of 4 hours (since this is the duration that is currently available). The battery system would supply backup power for a duration of approximately 4 hours, and once the batteries have been discharged the 39 gensets would serve to back up the battery system until the electrical grid is restored. However, having a tandem solution would not reduce the number of gensets required for the project; again, the gensets would need to be sufficient to support data center load

demands for longer outages if necessary. The battery system for a tandem BESS would require approximately 152,000 square feet (3.5 acres) of storage space.

5.6.3.1 Potential Feasibility Issues

The project site does not provide sufficient room for the proposed project and the tandem BESS' 152,000 square feet (3.5 acres) of battery storage. Also, project cost would increase significantly with a 400-MWh BESS configuration. Between 2015 and 2018, the average cost of utility-scale battery storage in the United States rapidly decreased from $2,152 to $625 per kWh. However, in 2019, the average cost of battery storage in California was higher than the national average, costing $1,522 per kWh (U.S. EIA 2020). In addition, the required reliability of the tandem BESS would need to be ensured. The electrical and electronic interface between the batteries and gensets would need to be tested to ensure operational reliability, with many large-scale data centers requiring at least 99.999 percent reliability.

The 2022 California Energy Code (California Building Standards Code [Cal. Code Regs., Title 24] Part 6, Building Energy Efficiency Standards, Nonresidential Photovoltaic and Battery Storage) requires battery storage systems when photovoltaic (PV) systems are required (i.e., for construction of new buildings). This regulation does not apply to data centers. The use of battery systems set forth in the California Energy Code update through its goals and primary functions is much different than that of large-scale data centers. Appendix JA12 of the updated code states that the primary function of the battery storage system is daily cycling for the purpose of load shifting, maximized solar self-utilization, and grid harmonization. The measure predicts that 100 MW of batteries will be installed in new nonresidential buildings in 2023 (DGS 2022). Given this prediction, it is assumed that many small capacity batteries would be installed across many buildings with PV generation to reduce peak demand for a few hours.

The goal and primary function of battery systems for large-scale data centers with large capacity demand (99 MW) is not daily cycling, but to provide backup power during a grid electrical outage lasting many hours. The daily cycling of battery systems reduces the overall lifespan of the battery system, increases wear and tear, and might reduce battery system reliability. Also, the reliability requirements of small capacity batteries used for peak demand relief for limited duration is different than large capacity batteries used as a backup power solution in large-scale data centers. Should a battery system of a building used for peak demand relief fail for any reason, the grid would still provide power to support the building's load. In contrast, if a single cell in a backup battery system fails, the whole system would be rendered inoperable and the battery system would need to be taken offline and inspected. Again, for a data center such as the proposed project, the only backup energy in the event of a grid outage would be from its backup power source. The reliability of the project's backup power source is of utmost importance to ensure customers' data is not lost.

5.6.4 Alternative Project Site

The *City of Santa Clara 2010–2035 General Plan* (General Plan) shows that the project site is designated High Intensity Office/Research and Development (R&D). The zoning district is ML – Light Industrial. The applicant is requesting a General Plan amendment from the City to align the General Plan designation with the zoning district. (See section **4.11 Land Use and Planning** for discussions of the land use designation and zoning for the site.) The project site is adjacent to properties designated Light Industrial, and the General Plan lists data centers as an allowable use for that land use designation. The proposed BDC would be compatible with industrial, technology-based, and commercial warehouse uses in the project area.

The applicant's project objectives address developing the data center on land that has been zoned for data center use at a location acceptable to the City. The applicant has a planning application on file with the City for the BDC General Plan amendment, Conditional Use Permit, and Architectural Review (PLN21-15069). The project is in review, and the applicant is working with the City on the site plans to ensure compliance with the City's project development and design requirements. Based on the active status of the planning application, CEC staff assumes that the project is proposed at a location that is acceptable to the City.

Staff assumes that the applicant's site screening process was focused on identifying a site with the necessary characteristics to ensure a reliable supply of high-quality power to the data center and satisfy the other project objectives. CEC staff knows of no potentially feasible alternative site that would allow a comparison of impacts with those of the proposed project. No comments on the site location were submitted following public noticing of the project. The CEQA Guidelines provide that an EIR "need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (Cal. Code Regs., tit. 14, § 15126.6, subd. (f)(3)). Therefore, no alternative site is evaluated in this EIR.

5.6.5 Decision to Eliminate These Alternatives from Further Consideration

The applicant's purpose for the BDC is to provide customers with mission critical server space, which requires a large capacity of servers, adequate space conditioning and a steady stream of high-quality power supply (GI Partners 2022a). The applicant's key objectives are to incorporate the most reliable and flexible form of backup electric generating technology into the BBGF considering reliability, commercial availability and feasibility, and technical feasibility. Specifically, the BBGF must provide greater than 99.999 percent reliability for data center customers. Fuel cells, and battery storage alternatives were eliminated from further consideration as alternative technologies to the proposed project based on their infeasibility and lack of a sufficient level of proven reliability in large-scale data center applications, such as this project. Data center customers need the most reliable data storage service available, and data center insurers

are willing to provide coverage only for proven technologies with an extremely low probability of operational failure.

The proposed project would be compatible with existing industrial and technology-based land uses in the area near the site. The City's adoption of a General Plan amendment to change the site's land use designation to Light Industrial would ensure consistency of the BDC with the General Plan. As the permitting agency for the project, the City is processing the BDC planning application for the project at its proposed location, which means that the City considers a data center to be an appropriate use for the site. No potentially feasible alternative site is known that would allow a meaningful comparison of impacts with the proposed project. For these reasons, no alternative site is included in this analysis of alternatives to the proposed project.

5.7 Alternatives Selected for Analysis and Comparison to the Proposed Project

The following alternatives were carried forward for full analysis and comparison to the proposed project in this EIR:

- Alternative 1: No Project/No Build Alternative
- Alternative 2: Natural Gas Internal Combustion Engine (ICE) Alternative

The No Project/No Build Alternative (Alternative 1) is required for analysis in every EIR. CEQA provides that the discussion of project alternatives is to focus on those that could feasibly avoid or lessen the proposed project's potentially significant impacts, "even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly" (Cal. Code Regs., tit. 14, § 15126.6, subd. (b)). A comparative analysis of the impacts of the alternatives is provided below, followed by an assessment of the extent to which each alternative could meet the basic project objectives. An assessment of potential feasibility issues is provided for the Natural Gas ICE Alternative (Alternative 2).

The comparative analysis of impacts is centered on the topics of air quality, public health, GHG emissions, and cultural and tribal cultural resources. For the other topics covered in this EIR, staff's analyses show essentially no differences between the impacts identified under the proposed project and Alternative 2. The discussions below summarize the environmental effects for Alternative 1 and Alternative 2 compared to the proposed project. (See also **Table 5-1**, below.) It is assumed that the project site location would remain the same under Alternative 2.

5.7.1 Alternative 1: No Project/No Build Alternative

The BDC site covers 5.12 acres on a single lot. The site address is 2805 Bowers Avenue in the city of Santa Clara. The property is developed with a two-story office building and associated paved surface parking. The existing building would be demolished as part of the project.

Should the BDC proposal not move forward, a new project could eventually be approved at the site that would be compatible with other uses in the area. Although a different, industrial use project could be proposed in the future, no development plan exists to allow a comparison with the proposed project, and it would be speculative to assume the characteristics of such an alternative. Therefore, under the No Project/No Build Alternative, current conditions would continue at the site for an unknown period. If the BDC were not constructed, the basic project objectives would not be attained.

As discussed under subsection "5.5 Environmental Impacts of the Proposed Project" above, staff recommends mitigation measures to reduce all potentially significant impacts identified in this EIR to less-than-significant levels. The No Project/No Build Alternative would avoid the proposed project's potentially significant impacts (*no impact* compared to the proposed project) because no project construction and operation would occur, summarized as follows:

- **Air Quality** – This alternative would avoid construction-related air emissions due to fugitive dust and exhaust from heavy duty construction equipment. This alternative would avoid the operational emissions related to maintenance testing and operation of the diesel-fired engine generators.
- **Biological Resources** – This alternative would avoid potentially significant impacts on biological resources, including raptors, migratory birds, and bats.
- **Cultural and Tribal Cultural Resources** – This alternative would avoid discovery of, and potential impacts on, buried archaeological and Native American resources that could otherwise be encountered during ground disturbing activities.
- **Geology and Soils** – This alternative would avoid disturbing paleontological resources during earth moving activities, were they discovered at the site.
- **Greenhouse Gas Emissions** – This alternative would avoid project-related direct GHG emissions from the diesel fueled generators and the indirect GHG emissions from the electricity use of the data center.
- **Hazards and Hazardous Materials** – This alternative would avoid impacts on the public and the environment from exposure to unknown or remnant contaminated soil or groundwater that could be encountered during demolition, ground disturbing activities, and project construction.
- **Transportation** – This alternative would avoid impacts from the estimated project-related vehicle miles traveled of 15.70 miles per worker.

5.7.2 Alternative 2: Natural Gas Internal Combustion Engine Alternative

Natural gas internal combustion engines (ICEs) are fueled by natural gas, while the proposed engines for the project would use renewable diesel (with ultra-low sulfur diesel as backup). Natural gas ICEs are available in capacities of up to 18 MW each. Their physical dimensions vary in size depending on their MW capacity. For example, one of the natural gas ICEs from manufacturer Power Solution International (PSI) has a capacity

of 445 kW and a nominal height of 12 feet. One of the natural gas ICEs manufactured by Innio has a capacity of 3 MW with a height for the genset assembly of 23 feet. As a point of reference, the height of the proposed diesel genset assembly for the proposed project is approximately 29 feet (GI Partners 2022a).

The preferred, most feasible method to supply fuel for the natural gas ICEs would be by pipeline through Pacific Gas and Electric's (PG&E's) underground natural gas transmission system. (Subsection 5.7.2.3 below discusses potential fuel supply methods for this alternative.) Based on PG&E's gas transmission pipeline map, the two closest locations for independent natural gas pipeline connections are approximately 1.0 mile west of the project site on Lawrence Expressway[5] and approximately 1½ miles east of the project site on Lafayette Street.[6] In concept, the primary pipeline for this alternative could connect to the nearby gas line on Lawrence Expressway. Another pipeline connecting to the gas line at Lafayette Street could also be installed to add fuel supply reliability, as discussed below. It is assumed that new pipelines would be constructed along existing roadway rights-of-way and utility corridors. The natural gas pipeline trenches would be approximately 6 feet deep and 4 to 6 feet wide, with a minimum cover depth of 36 inches. The installation of natural gas pipelines would cause temporary impacts during construction. State and local regulations and the mitigation measures for the project would be applied to pipeline construction under this alternative to reduce construction-related impacts to less than significant (e.g., measures to reduce impacts in the areas of Air Quality, Biological Resources, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, and Transportation).

Under this alternative, the footprint of the natural gas ICEs might not be the same as for the proposed diesel-fired gensets. The number of engines and associated equipment, height, fuel delivery, and onsite fuel storage would be different. However, it is assumed under this alternative that the massing and locations of the data center buildings would be essentially the same as for the proposed project.

Data centers require a power generating solution with quick start times. The time it takes a natural gas ICE to begin carrying data center load from its power-off position (the moment the engine synchronizes to the bus bar) varies depending on the natural gas ICE's size and capacity. In the meantime, the UPS system can provide power to the data center while the ICEs startup. The startup time for the PSI natural gas ICEs and the Innio natural gas ICEs are fast enough that the proposed project's UPS system would not need to be redesigned.

5.7.2.1 Air Quality and Public Health

Staff compared criteria air pollutant emissions of natural gas ICEs against the proposed diesel-fired engines for the BBGF. The proposed 32, 3-MW engines for the project would be equipped with selective catalytic reduction (SCR) equipment and diesel particulate

5 Conceptually along Kifer Road west to Lawrence Expressway.

6 Conceptually along Walsh Avenue east to Lafayette Street.

filters (DPF) to achieve compliance with Tier 4 emission standards (GI Partners 2022a). However, it takes time for SCRs to reach their activation temperature and become fully effective in controlling NOx emissions. Depending on load, the SCR would be expected to become fully operational within 15 minutes.

For the Natural Gas ICE Alternative, information is primarily based on the data provided for the San José Data Center (SJDC) application (Jacobs 2021a) (Docket #19-SPPE-04). (The CEC adopted an order approving the Small Power Plant Exemption (SPPE) for the SJDC on July 13, 2022.) The natural gas ICEs for the SJDC will be equipped with a 3-way catalyst system to reduce emissions of NOx, CO, volatile organic compounds (VOCs), and air toxics. The applicant for the SJDC also assumed 15 minutes of operation with uncontrolled emissions and 45 minutes of operation with controlled emissions to estimate hourly emissions (Jacobs 2021b).

Staff compared the emission factors in pounds per megawatt-hour (lbs/MWe-hr) for the proposed diesel-fired engines for the BBGF and those for the natural gas ICEs at the SJDC. Staff assumed the same 15-minute warm up period for the SCRs of the diesel engines and the 3-way catalyst system for the natural gas ICEs. As shown in **Table D-1** of **Appendix D**, the emission factors in lbs/MWe-hr for the NOx emissions would reduce by more than 98 percent using natural gas ICEs compared to the proposed diesel-fired engines for the BBGF. The particulate matter (PM) emissions would reduce by more than 78 percent using natural gas ICEs compared to the proposed diesel-fired engines. The VOC emissions would reduce by about 77 percent using natural gas ICEs compared to the proposed diesel-fired engines. The CO emissions would reduce by about 80 percent using natural gas ICEs compared to the proposed diesel-fired engines. The sulfur dioxide (SO_2) emissions would reduce by about 46 percent using natural gas ICEs compared to the proposed diesel-fired engines.

It should be noted that the emission factors for the proposed diesel-fired engines shown in **Table D-1** of **Appendix D** are based on the use of petroleum-based diesel. However, the applicant has proposed to use renewable diesel as the primary fuel for the engines, with ultra-low sulfur diesel serving as a secondary fuel to be used only when renewable diesel is unavailable. The California Air Resources Board (CARB) 2021 testing report shows that for diesel engines with SCR and DPF, there are no statistically significant differences in NOx, PM, and total hydrocarbon emissions using renewable diesel when compared to ultra-low sulfur, petroleum-based diesel (CARB 2021). For CO emissions, there are either no statistically significant differences (or emissions were already below background levels) between renewable diesel and ultra-low sulfur, petroleum-based diesel or 5 to 44 percent decreases using renewable diesel compared to ultra-low sulfur, petroleum-based diesel, depending on the testing cycle used. Ideally, this should be confirmed with testing under controlled conditions using the same size of engine proposed for this facility and employing the same test cycle used for engine certification. With the currently available information, staff expects the comparison results of criteria air pollutant emissions of the Natural Gas ICE Alternative to the proposed diesel engines using renewable diesel to be similar to those shown for ultra-low sulfur diesel in **Table**

D-1 of **Appendix D**, except that the exact percent reduction in CO emissions would be different depending on the testing cycle used.

Staff is unable to find data comparing air toxics emissions of natural gas ICEs with those for diesel-fired engines; however, these are expected to be reduced due to the reductions reported for VOCs and PM.

In addition, staff does not assume additional operation of the natural gas ICEs to offset the cost difference between the technologies and acknowledges that the capital cost of natural gas ICEs could increase project costs. Staff acknowledges that the operational profile might be different for the natural gas ICEs, and annual emissions may be higher since they might operate more based on other project applications, such as participation in a demand response program. However, staff is not able to predict the exact number of operation hours and the associated emissions for the natural gas ICEs in such a scenario since it is unknown how much grid support service would be provided. Therefore, staff only compares the emission factors in lbs/MWe-hour for the natural gas ICEs and those for the renewable diesel-fired engines for the proposed project, assuming a similar operating profile.

Air quality impacts using natural gas ICEs are expected to be *much less* than those that would occur with the proposed diesel-fired engines for the project. This would result independent of whether the engines are fueled on renewable diesel or ultra-low sulfur, petroleum-based diesel. Public health impacts from toxic air contaminants using natural gas ICEs are *likely less* than those that would occur with the proposed diesel-fired engines for the BBGF, similarly irrespective of the type of diesel used.

5.7.2.2 Greenhouse Gas Emissions

As shown in **Table D-1** of **Appendix D**, natural gas fueled ICEs would reduce tailpipe GHG emissions by approximately 8 percent from conventional diesel-fired engines. However, the applicant has proposed to use renewable diesel as primary fuel in the proposed engines. Mitigation measure **GHG-1** would require the applicant to use renewable diesel for 100 percent of total energy use by the emergency backup generators, and only use ultra-low sulfur diesel as a secondary fuel in the event of supply challenges or a disruption in obtaining renewable diesel. CARB's 2021 testing report shows that the tailpipe CO_2 emissions would reduce by about 3 to 4 percent using renewable diesel compared to ultra-low sulfur, petroleum-based diesel (CARB 2021). Therefore, the tailpipe CO_2 emissions of natural gas ICEs would only be about 4 to 5 percent lower than those for the proposed engines using renewable diesel.

To have a more complete understanding of the impact of replacing diesel with natural gas, it is necessary to examine the full fuel-cycle of each fuel from origin to use. This is because GHGs have a global impact rather than a local impact. As shown in **Table D-2** of **Appendix D**, when extending to the full fuel cycle, GHG emissions from natural gas ICEs fueled with pipeline natural gas produced from fossil feedstocks would be about 20 percent lower than those from conventional diesel as indicated by the carbon intensity

values. Moreover, natural gas feedstocks from some renewable feedstocks may have a much lower carbon intensity. The carbon intensity values of most renewable feedstocks are even negative, reflecting a net reduction in fuel cycle carbon emissions. However, **Table D-2** of **Appendix D** also shows that there are 61 to 83 percent reductions in carbon intensity values using renewable diesel in place of ultra-low sulfur, petroleum-based diesel. Therefore, in order for the natural gas ICEs to remain an environmentally superior alternative to the proposed diesel engines using renewable diesel, it would be required to use a certain percentage of renewable natural gas to reduce the fuel cycle GHG emissions. Since there are uncertainties regarding how much renewable natural gas would be used, the comparative impact is *likely similar* under this alternative.

Fossil natural gas and some forms of renewable natural gas still have some carbon associated with the fuel cycle. These show up in the table for those fuels with a carbon intensity that is greater than zero. In these cases, additional measures could be needed before an alternative fueled by natural gas would be considered a carbon-free facility.

5.7.2.3 Cultural and Tribal Cultural Resources

Depending on pipeline route and location, the natural gas pipelines for this alternative could cause significant adverse impacts on cultural and tribal cultural resources. Such impacts could include direct or indirect impacts on historic built environment resources, historic or Native American archaeological deposits, Native American human remains, or tribal cultural resources.

The historic built environment project area of analysis (PAA) for the proposed project includes the project site and properties within a one-parcel boundary of the project site, and associated linears. Therefore, any alternatives requiring additional linear infrastructure would require additional analysis of adjacent parcels for historic built environment resources. This would include all properties directly adjacent to any pipeline. Likewise, the archaeological PAA includes the project site and associated linears, which would require additional analysis of the potential for the alignments of the natural gas pipelines to impact archaeological resources.

Staff analysis of the conceptual routes for the natural gas fuel supply pipelines under Alternative 2 has identified one previously recorded cultural resource within the conceptual alignment and tie-in to existing natural gas infrastructure. Lafayette Street, a historic road alignment that runs north-south from Santa Clara to Alviso, dates to the 1850s and was originally called the Santa Clara-Alviso Road. Recorded in 2002 by JRP Historical Consulting Services, Lafayette Steet has not yet been evaluated for significance. Therefore, construction of the natural gas pipelines could cause impacts on a historical resource under the Natural Gas ICE Alternative. The lead agency would be responsible for evaluating the significance of Lafayette Street in its assessment of impacts on historical resources under CEQA. Nonetheless, potential impacts on historical resources that could result from the construction of the natural gas fuel supply pipeline would likely be reduced to less-than-significant levels by implementing mitigation measures **CUL-1** through **CUL-9**, and the comparative impact is *likely similar* under this alternative.

5.7.2.4 Potential Feasibility Issues and Attaining the Project Objectives

Natural gas ICEs are cleaner burning due to the type of fuel; however, the technology is not without feasibility issues. The proposed project would employ 32 total backup gensets (including the three house gensets to support redundant critical cooling equipment and other general building and life safety services). Depending on the MW size of the natural gas ICE engine, more engines may or may not be needed under this alternative. There are two potential fuel supply methods: onsite storage and pipeline connection.

Onsite Fuel Storage. Onsite storage would require redesigning the project and would suffer from some feasibility issues. The project would need approximately 201 million gallons of natural gas storage to provide 24 hours of backup natural gas ICE operation, the same backup duration as for the proposed project. Liquefied natural gas (LNG)[7] would minimize the storage space, but the needed storage volume would still be substantially larger than that of diesel fuel (both renewable or conventional).[8,9] LNG would also need to be stored and distributed with specialized equipment, including storage in insulated tanks to keep the fuel in a liquid state at minus 260 degrees Fahrenheit. For LNG to remain at a constant temperature and pressure, it must allow for natural evaporation known as BOG. BOG is essentially a loss of stored fuel that occurs when the ambient temperature heats the insulated tanks. LNG must release this gas to maintain its liquid state. To mitigate the loss of fuel and gas release into the atmosphere, BOG can be reliquefied and put back into the LNG tank or used as fuel in certain marine applications, steam turbines, or in a gasification unit for creating alternative fuels. LNG would also need to undergo a regasification process for the fuel to be used in natural gas ICEs. Both reliquefication and regasification would result in additional processes and equipment and an increased footprint.

In addition, fuel storage, reliquefication, and regasification equipment must comply with standards specified by the National Fire Protection Association and the City Code to protect against hazardous material release, fire, and explosions during natural disasters and as the result of accidents. Also, permits for the storage of hazardous materials would be needed pursuant to the City Code.

Pipeline Infrastructure. As discussed above, the preferred, most feasible method to supply fuel for the natural gas ICEs would be by pipeline through PG&E's underground natural gas transmission system. Based on PG&E's gas transmission pipeline map, there

7 Natural Gas can be liquefied to 600 cubic meters times smaller than its volume in its gas state.

8 LNG calculated as: Approximate ICE Fuel Consumption 9,500 cubic feet per megawatt-hour x 118 MW (includes redundant engines) x 24 hours of backup duration = 26,904,000 cubic feet of natural gas = 201 million gallons.

Conversion Cubic feet gas to liquid gallons: 26,904,000 cubic feet x 0.0283168 cubic meter gas x (1 cubic meter LNG / 600 cubic meter gas) x 264.172 liquid gallons = 335,426 gallons.

9 Renewable diesel volume for current proposal: Genset Fuel Consumption (207 gal/hr x 24 hours per year x 32 generators) = 160,000 gallons per year

are two locations for independent natural gas pipeline connections within approximately 1½ miles of the BDC site.

Pipelines are susceptible to natural disasters (e.g., earthquakes) as well as accidents. This can potentially cut off fuel supply to the project during a grid outage. Access to the secondary pipeline 1½ miles east of the project site on Lafayette Street would increase fuel supply reliability. The Natural Gas ICE Alternative could potentially be feasible and attain most of the project objectives, and it could connect to the underground natural gas pipeline system with implementation of mitigation measures to ensure impacts would be reduced to less than significant.

However, for the BDC to provide the same level of reliability with ICEs as it would with the renewable diesel-fired gensets, or at least 99.999 percent availability factor, the ICE fuel delivery system under this alternative must not be susceptible to any disruptions. Although two natural gas pipelines could be available for the project, due to the pipelines' susceptibility to natural disasters (e.g., earthquakes) as well as accidents, the ICE fuel delivery and storage system under this alternative might provide a slightly lower level of reliability than has been demonstrated by the diesel fuel delivery and storage system for many data centers.

However, in July 2022 the CEC issued a SPPE for the SJDC, mentioned earlier in this section. The SJDC, which is owned by Microsoft but is not yet in operation, will use natural gas ICEs for backup generation during grid outages and will be used for its own Microsoft-affiliated clients (Jacobs 2021b). Microsoft chose to use ICEs for the SJDC because the project site is in a unique location. The site has two redundant high-pressure independent natural gas pipelines (separate regional backbones). These two pipelines will increase the reliability of fuel supply delivery to the site during emergencies. Thus, Microsoft has determined that the reliability requirements (of 99.999 percent) of the project would meet the project objectives (DayZenLLC 2022c).

5.8 Environmentally Superior Alternative

CEQA requires that an EIR identify the *environmentally superior alternative* and discuss the facts supporting that selection. Alternative 1, the No Project/No Build Alternative, is the environmentally superior alternative because it would avoid all impacts of the proposed project by not creating any physical change to the environment. However, Alternative 1 would not attain any of the project objectives. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (Cal. Code Regs., tit. 14, § 15126.6, subd. (e)(2)).

Staff compared Alternative 2, the Natural Gas ICE Alternative, to the proposed project and determined that it has some advantages in terms of reducing impacts. Staff's conclusions are summarized below.

5.8.1 Alternative 2: Natural Gas Internal Combustion Engine Alternative

The GHG impacts of this alternative would likely be similar to those of the proposed project if renewable natural gas were used for this alternative. Criteria air pollutant emissions and air quality impacts using natural gas ICEs are expected to be much less than those that would occur with the proposed project's gensets. Staff is not able to find data comparing the air toxics emissions of natural gas ICEs with those for diesel engines, but these are expected to be reduced due to the reductions reported for VOCs and PM. Therefore, public health impacts using natural gas ICEs would likely be less than those that would occur with the project's diesel engines. Impacts on cultural and tribal cultural resources would likely be similar to those of the proposed project. Additional analysis of the natural gas pipeline routes and adjacent parcels would be required to determine the presence of resources that could be affected by pipeline installation.

Staff considers Alternative 2 to be *environmentally superior* to the proposed project due to its reductions in criteria air pollutants. Redesigning the project with natural gas ICE technology could increase the number of engines onsite depending on the MW sizing and physical dimensions. As discussed earlier, two gas pipeline connections are available and likely needed to match the fuel supply reliability of the proposed project. Permitting and construction of the new pipelines would take time to complete.

Table 5-1 summarizes the comparison of environmental effects for each alternative to the proposed project for the topics of air quality, public health, GHG emissions, and cultural and tribal cultural resources. As discussed above, staff's comparative analyses for the other topics covered in this EIR show essentially no differences between the impacts identified under the proposed project and the Natural Gas ICE Alternative. The No Project Alternative would result in no impacts.

TABLE 5-1 SUMMARY COMPARISON OF IMPACTS OF THE PROPOSED PROJECT TO THE ALTERNATIVES

Environmental Topics and Impacts	Proposed Project	Alternatives	
		No Project/No Build	Natural Gas Internal Combustion Engine
Air Quality, Public Health, Greenhouse Gas (GHG) Emissions			
Criteria air pollutants	LTS with Mitigation	No Impact	LTS with Mitigation (Much Less)
Toxic air contaminants (TACs)	LTS	No Impact	LTS (Likely Less)
GHG emissions	LTS with Mitigation	No Impact	LTS with Mitigation (Likely Similar)
Cultural and Tribal Cultural Resources			
Direct or indirect impacts from installation of natural gas pipelines	LTS with Mitigation	No Impact	LTS with Mitigation (Likely Similar)

Notes: Impact conclusions for the proposed project and the alternatives are shown using these abbreviations:
No Impact = the proposed project or an alternative has no potential to affect the resource
LTS = less-than-significant impact, no mitigation required
LTS with Mitigation = mitigation measure(s) required to reduce a potentially significant impact to less than significant

The comparisons of impacts to the proposed project are conveyed using these abbreviations (staff identified no impacts that would be greater than the proposed project):

- Much Less
- Likely Less (conclusion that is estimated and cannot be fully verified with available data)
- Likely Similar (conclusion that is estimated and cannot be fully verified with available data)

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Section 6

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6 Authors and Reviewers

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Section 7

Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM

Bowers Backup Generating Facility
22-SPPE-01
Planning File Nos. PLN21-15069 and PLN22-00479
August 2023

PREFACE

Section 21081.6 of the California Environmental Quality Act (CEQA) requires a Lead Agency to adopt a Mitigation Monitoring and Reporting Program (MMRP) whenever it approves a project for which measures have been required to mitigate or avoid significant effects on the environment. The purpose of the monitoring and reporting program is to ensure compliance with the mitigation measures during project implementation.

While the California Energy Commission (CEC) is the lead agency in assessing the exemption application, the CEC is not the jurisdiction that will be approving the project for construction and operations. Such authority will be with the City of Santa Clara (City). Therefore, the MMRP will be implemented and enforced by the City upon its approval of the project.

The Draft Environmental Impact Report (EIR) prepared for the Bowers Backup Generating Facility project concluded that the implementation of the project would not result in significant effects on the environment with the incorporation of mitigation measures. This MMRP addresses those measures in terms of how and when they will be implemented.

This document does *not* discuss those subjects for which the Draft EIR concluded that the impacts from implementation of the project would be less than significant.

I, _____, the applicant, on the behalf of _____, hereby agree to fully implement the mitigation measures described below which have been developed in conjunction with the preparation of an EIR for my proposed project. I understand that these mitigation measures or substantially similar measures will be adopted as conditions of approval with my development permit request to avoid or significantly reduce potential environmental impacts to a less than significant level.

Project Applicant's Signature _____

Date_____

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
AIR QUALITY					
Impact 4.3-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?					
AQ-1: To ensure that fugitive dust impacts are less than significant, the project will implement the Bay Area Air Quality Management District (BAAQMD) recommended Best Management Practices (BMPs) during the construction phase, the project owner shall implement a construction emissions control plan that has been reviewed and approved by the Director or Director's designee of the City of Santa Clara Community Development Department prior to the issuance of any grading or building permits, whichever occurs earliest. These BMPs are incorporated into the design of the project and will include: • Water all exposed areas (e.g., parking areas, graded areas, unpaved access roads) twice a day. • Maintain a minimum soil moisture of 12% in exposed areas by maintaining proper watering frequency.	Implement the BAAQMD's recommended BMPs to control fugitive dust and additional measures to control exhaust emissions	During construction phase	City of Santa Clara Director of Community Development or Director's designee	Receive and approve the fugitive dust control measures and exhaust control measures during construction	Prior to the issuance of any demolition, grading, and/or building permits (whichever occurs earliest)

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
AIR QUALITY					
• Cover all haul trucks carrying sand, soil, or other loose material. • Suspend excavation, grading, and/or demolition activities when average wind speed exceeds 20 miles per hour. • Pave all roadways, driveways, and sidewalks as soon as possible. Lay building pads as soon as grading is completed, unless seeding or soil binders are used. • Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction with a maximum 50 percent air porosity. • Use a power vacuum to sweep and remove any mud or dirt-track next to public streets if visible soil material is carried onto the streets. • Limit vehicle speeds on unpaved roads to 15 miles per hour (mph). • Minimize idling time for all engines by shutting engines when not in use or limiting idling time to a maximum of five minutes. Provide clear					

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
AIR QUALITY					
signage for construction workers at all access points. • Properly tune and maintain construction equipment in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and name of the person to contact regarding dust complaints and the BAAQMD telephone number. The contact person shall implement corrective measures, as needed, within 48 hours, and the BAAQMD shall be informed of any legitimate complaints received to verify compliance with applicable regulations. Limit simultaneous occurrence of excavation, grading, and ground-disturbing construction activities. • Minimize idling time of diesel-powered construction vehicles to two minutes.					

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
AIR QUALITY					
• As a condition of contract, require all on-road heavy-duty trucks to be zero emissions or meet the most stringent emissions standard, such as model year (MY) 2024 to 2026, as available. Use grid power for construction activities whenever possible; if grid power is not available, use alternative power such as battery storage, hydrogen fuel cells, or renewable fuels. If no other options are available, use Final Tier 4 diesel generators. • Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. • All off-road equipment greater than 25 horsepower (hp) shall have engines that meet or exceed Tier 4 final off-road emission standards. Use of zero-emission and hybrid-powered equipment is encouraged.					
Impact 4.3-c Would the project expose sensitive receptors to substantial pollutant concentrations?					
AQ-1 (see Impact 4.3-b for mitigation)					

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	**Timing of Compliance**	**Oversight Responsibility**	**Actions/Reports**	**Monitoring Timing or Schedule**
BIOLOGICAL RESOURCES					
Impact 4.4-a Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?					
BIO-1: Avoid and Minimize Impacts to Protected Bird Species If initial demolition and construction activities, including tree, shrub, or vegetation removal, are to occur during the breeding season February 1st to August 31st inclusive, a qualified biologist, approved by the City of Santa Clara, shall conduct pre-construction surveys for nesting protected birds onsite and within 250 feet (for raptors) of the site, where accessible. The survey shall occur no more than 7 days prior to the onset of ground disturbance if disturbances are to commence between February 1st and June 30th and no more than 14 days prior to the onset of ground disturbance between July 1st and August 31st. Additional follow-up surveys may be required if a period of construction	Avoidance of construction activities during nesting season. If construction activities occur between February 1st and August 31st, a pre-construction nesting bird survey shall be conducted by a qualified biologist. In coordination with CDFW, a construction-free buffer zone shall be established around active nests	Prior to initiation of any onsite project related activities (staging, demolition, construction, etc.)	City of Santa Clara Director of Community Development or Director's designee	Confirm that construction activities are scheduled outside of the nesting season. If not outside nesting season, surveys are required	Prior to initiation of any onsite project related activities (staging, demolition, construction, etc.)

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
BIOLOGICAL RESOURCES					
inactivity exceeds two weeks in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation. If a nesting protected bird is detected, an appropriate construction-free buffer (typically 250 feet for non-raptors to 500 feet for raptors) shall be established in consultation with the California Department of Fish and Wildlife (CDFW). The actual size of the buffer, which shall be determined by the project's qualified biologist, would depend on species, topography, and type of activity that would occur in the vicinity of the nest. The appropriate buffer zone will be marked in the field with exclusion fencing, within which no construction, tree removal, or vegetation clearing shall commence until the qualified biologist verifies that the nest(s) are no longer active. The project buffer would be monitored periodically by the project biologist to verify compliance. After the nest is completed, as determined by the biologist, the buffer would no longer be required. If an active bird nest is	The biologist shall submit a report indicating the results of the survey and any designated buffer zones to the City of Santa Clara Director of Community Development or Director's designee	Prior to the issuance of permits for tree removal, demolition, or grading	City of Santa Clara Director of Community Development or Director's designee	The qualified biologist shall inspect all potentially affected trees and designate a buffer-free zone around nest until the end of the nesting activity. Applicant submits report completed by biologist for pre-construction survey results.	Prior to initiation of any onsite project related activities (staging, demolition, construction, etc.)

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
BIOLOGICAL RESOURCES					
discovered during demolition or construction, then a buffer zone shall be established under the guidelines specified. The applicant shall submit a report indicating the results of the survey and any designated buffer zones to the satisfaction of the City of Santa Clara's Director of Community Development prior to the issuance of permits for tree removal, demolition, or grading. The report(s) shall contain maps showing the location of all nests, species nesting, status of the nest (e.g., incubation of eggs, feeding of young, near fledging), and the buffer size around each nest (including reasoning behind any alterations to the initial buffer size). The report shall be provided within 10 days of completing a pre-construction nest survey.					
BIO-2: Avoid and Minimize Impacts to Bat Species If suitable roosting habitat for special-status bats will be affected by project construction (e.g., removal of buildings,	A qualified biologist shall conduct surveys during the appropriate time of day to determine if bats are roosting	No less than 7 days and no more than 14 days prior to beginning tree removal	City of Santa Clara Director of Community Development or Director's designee.	A tally of the number and species of bats using the roost shall be documented and submitted in report.	Prior to initiation of any onsite project related tree removal and/or demolition

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
BIOLOGICAL RESOURCES					
removal of trees), a qualified wildlife biologist shall conduct surveys for special-status bats during the appropriate time of day to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days prior to beginning tree removal and/or demolition or ground disturbance. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (e.g., Anabat, etc.). Visual surveys shall include trees and structures within 50 feet of construction activities. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study and no further mitigation is required. If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts.		and/or demolition or ground disturbance			or ground disturbance
	If bats are roosting, a Bat Mitigation and Monitoring Plan shall be prepared and implemented for habitat loss, if necessary.	Prior to initiation of any onsite project related tree removal and/or demolition or ground disturbance	City of Santa Clara Director of Community Development or Director's designee and California Department of Fish and Wildlife. Bat houses built to California Department of Fish and Wildlife standards	Depending on the presence of bats, exclusion methods and bat houses may be specified for use depending on the circumstances and included in the Bat Mitigation and Monitoring Plan.	Prior to initiation of any onsite project related tree removal and/or demolition or ground disturbance

MITIGATION	MONITORING AND REPORTING PROGRAM				
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BIOLOGICAL RESOURCES					
If roosts or a maternity colony are determined to be present and must be removed, the bats shall be excluded from the roosting site before the tree or structure is removed. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter) or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). If roosts cannot be avoided or it is determined that construction activities may cause roost abandonment, such activities shall not commence until permanent, elevated bat houses have been installed outside of, but near, the construction area. Placement and height will be determined by a qualified wildlife biologist, but the height of bat house shall be at least 15 feet. Bat houses shall be multi-chambered and be purchased or constructed in accordance with California Department of Fish and Wildlife (CDFW) standards. The number of bat houses					

MITIGATION	MONITORING AND REPORTING PROGRAM				
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BIOLOGICAL RESOURCES					
required shall be dependent upon the size and number of colonies found, but at least one bat house shall be installed for each pair of bats (if occurring individually) or of a sufficient number to accommodate each colony of bats to be relocated. If bat roosts are detected, then a Bat Mitigation and Monitoring Plan (Plan) shall be prepared and implemented to mitigate for the loss of roosting habitat. The Plan shall include information pertaining to the species of bat and location of the roost, exclusion methods and roost removal procedures, compensatory mitigation for permanent impacts (including specific mitigation ratios and location of proposed mitigation as described in the above bullet) and monitoring to assess bat use of mitigation areas. This Plan shall be submitted to the City of Santa Clara and CDFW for review and approval prior to project activities that would disturb roosting bats.					

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	**Timing of Compliance**	**Oversight Responsibility**	**Actions/Reports**	**Monitoring Timing or Schedule**
CULTURAL AND TRIBAL CULTURAL RESOURCES					
Impact 4.5-a Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?					
CUL-1: Cultural Resources Identification, Monitoring, and Treatment Plan Prior to the issuance of any grading permit, a project-specific Cultural Resources Identification, Monitoring, and Treatment Plan (Plan) shall be prepared. The Plan shall be prepared by a Secretary of the Interior-qualified archaeologist, in consultation with the Tamien Nation and a qualified Native American monitor registered with the Native American Heritage Commission (NAHC) with an interest in the city of Santa Clara and that is traditionally and culturally affiliated with the geographic area. The Plan shall reflect permit-level detail pertaining to depths and locations of all ground disturbing activities. The Plan shall be prepared and submitted to the City of Santa's Clara Director of Community Development prior to approval of any grading permit. The Plan shall contain, at a minimum:	A qualified archaeologist in consultation with the Tamien Nation and a qualified Native American monitor shall prepare a project specific Cultural Resources Identification, Monitoring, and Treatment Plan and submit it to the City of Santa Clara Director of Community Development or Director's designee for review and approval	Prior to issuance of grading permits	City of Santa Clara Director of Community Development or Director's designee	Review and approve the Cultural Resources Identification, Monitoring, and Treatment Plan	Prior to issuance of grading permit

MITIGATION	MONITORING AND REPORTING PROGRAM				
	Documentation of Compliance [Project Applicant/Proponent Responsibility]		Documentation of Compliance [Lead Agency Responsibility]		
	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
CULTURAL AND TRIBAL CULTURAL RESOURCES					
• Identification of the scope of work and range of subsurface effects (including location map and development plan), including requirements for preliminary field investigation and construction monitoring. • Description of the environmental setting (past and present) and the historic, California Native American archaeological, and ethnographic background of the parcel (potential range of what might be found). • Development of research questions and goals to be addressed by the investigation (what is significant vs. what is redundant information). • Detailed field strategy (including the preliminary field investigation) used to identify cultural deposits, record, recover, or avoid the finds and address research goals. • Analytical methods. • Handling and preservation of cultural materials. • Report structure of the closing cultural resources report including a					

MITIGATION	MONITORING AND REPORTING PROGRAM				
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CULTURAL AND TRIBAL CULTURAL RESOURCES					
confidential technical report and layperson's report and an outline of document contents in one year of completion of construction (provide a draft for review before a final report). • Disposition of the artifacts, including identification of potential reburial location(s) on site. • Appendices: all site records, correspondence, and consultation with Native Americans, etc.					
CUL-2: Worker Environmental Awareness Program Training Prior to issuance of the grading permit by the City of Santa Clara's Community Development Department, and for the duration of ground disturbance, the project shall be required to submit evidence that Worker Environmental Awareness Program (WEAP) training was held for all existing and any new employees. The training shall be facilitated by the project archaeologist in coordination with a Native American representative registered with the Native American Heritage Commissions	The qualified archaeological specialists in consultation with the Native American representative shall prepare a WEAP and submit an electronic copy to the City of Santa Clara Director of Community Development or Director's designee	Prior to issuance of grading permit	City of Santa Clara Director of Community Development or Director's designee	Review and approve the Workforce Environmental Awareness Program	Prior to issuance of grading permit.

MITIGATION	MONITORING AND REPORTING PROGRAM				
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	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
CULTURAL AND TRIBAL CULTURAL RESOURCES					
with an interest in the city of Santa Clara and that is traditionally and culturally affiliated with the geographic area as described in Public Resources Code, section 21080.3. This training should include: a discussion of applicable laws and penalties under the laws; samples or visual aids of artifacts that could be encountered in the project vicinity, including what those artifacts may look like partially buried, or wholly buried and freshly exposed, and instructions to halt work in the vicinity of any potential cultural resource discovery, and notify the City-approved archaeologist and Native American cultural resources monitor. The Native American monitor shall provide a Tribal Cultural Resources Sensitivity Training in conjunction with the WEAP.	for review and approval.				
	WEAP and Tribal Cultural Resources Sensitivity training shall be provided to all existing and new employees and a monthly report shall be submitted to the City of Santa Clara Director of Community Development or Director's designee quantifying the number of workers who received training the prior month as well as a running total of all workers who have received training over the course of the project	Prior to and for the duration of ground disturbing activities	Applicant/Owner; City of Santa Clara Director of Community Development or Director's designee	Review and approve the WEAP training monthly reports	Monthly for the duration of ground disturbing construction activities

MITIGATION	MONITORING AND REPORTING PROGRAM				
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CULTURAL AND TRIBAL CULTURAL RESOURCES					
CUL-3: Preliminary Field Investigations After removal of pavement at the project site and prior to grading, a Secretary of the Interior-qualified archaeologist and qualified Native American monitor shall conduct a pedestrian survey over the exposed soils to determine if any surface archaeological manifestations are present. Prior to issuance of any grading or demolition permits, the project applicant shall complete a preliminary field investigation program in conformance with the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan required under **CUL-1**. Results of the investigation shall be provided to the City of Santa Clara's Director of Community Development prior to issuance of any grading permit. If any finds were discovered during the preliminary field investigation, the project archaeologist shall implement **CUL-5** for evaluation and recovery methodologies. The results of the preliminary field investigation shall be	The qualified archaeologist shall conduct a preliminary field investigation of exposed soils with a Native American monitor present	After demolition of the existing building removal of pavement and prior to grading	City of Santa Clara Director of Community Development or Director's designee	Review the results and approve next steps	Prior to grading
	If the preliminary field investigation determines that resources are present and significant, treatment plan will be followed	Prior to grading	City of Santa Clara Director of Community Development or Director's designee	Review the results and approve next steps	Prior to grading

MITIGATION	MONITORING AND REPORTING PROGRAM				
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CULTURAL AND TRIBAL CULTURAL RESOURCES					
submitted to the Director of Community Development for review and approval prior to issuance of any grading permit. The California Department of Parks and Recreation 523 series forms shall be submitted along with the report for any cultural resources encountered over 50 years old.					
CUL-4: Construction Monitoring and Protection Measures All ground-disturbing activities (e.g., grading and excavation) shall be completed under the observation of a Secretary of the Interior-qualified archaeologist and a qualified Native American monitor, registered with the Native American Heritage Commission (NAHC) with an interest in the city of Santa Clara. Preference in selecting Native American monitors shall be given to members of the Tamien Nation and Native Americans with: • Traditional ties to the area being monitored. • Knowledge of local Native American village sites and habitation patterns.	Project applicant/owner shall submit the qualifications of archaeological specialists and Native American monitors to the City of Santa Clara Director of Community Development or Director's designee with a signed letter of commitment or agreement to monitor	Prior to issuance of a grading permit	City of Santa Clara Director of Community Development or Director's designee	Review and approve the qualifications of archaeologist and Native American monitors	Prior to issuance of a grading permit
	The archaeologist and Native American monitor	During grading and ground	City of Santa Clara Director of Community	Review monitoring logs as needed	During grading and ground

MITIGATION	MONITORING AND REPORTING PROGRAM				
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CULTURAL AND TRIBAL CULTURAL RESOURCES					
• Knowledge and understanding of Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.9 et seq. • Ability to effectively communicate the requirements of Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.9 et seq. • Ability to work with law enforcement officials and the Native American Heritage Commission to ensure the return of all associated grave goods taken from a Native American grave during excavation. • Ability to travel to project sites within traditional tribal territory. • Knowledge and understanding of Title 14, California Code of Regulations, section 15064.5. • Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding California Environmental Quality Act (CEQA) mitigation provisions.	will monitor full-time all grading and ground disturbing activities and maintain a daily monitoring log	disturbing activities	Development or Director's designee.		disturbing activities
	Work shall be stopped if cultural resources are encountered within a 50' radius	During ground disturbing activities	City of Santa Clara Director of Community Development or Director's designee; Secretary of the Interior-qualified archaeologist or qualified Native American monitor	Review and approve work stoppage	During grading and ground disturbing activities
	If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent, they may prepare a report detailing their	During grading and ground disturbing activities	City of Santa Clara Director of Community Development or Director's designee	Review and approve request to reduce cultural resources monitoring	During grading and ground disturbing activities

MITIGATION	MONITORING AND REPORTING PROGRAM				
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	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
CULTURAL AND TRIBAL CULTURAL RESOURCES					
• Ability to read a topographical map and be able to locate site and reburial locations for future inclusion in the NAHC's Sacred Lands Inventory. • Knowledge and understanding of archaeological practices, including the phases of archaeological investigation. The qualified archaeologist or a qualified Native American monitor, shall have authority to halt construction activities temporarily within a 50-foot radius of any cultural resources finds. If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent, then a letter report detailing the rationale for making such a reduction and summarizing the monitoring results shall be provided to the Director of Community Development. If, for any reasons, the qualified archaeologist or a qualified Native American monitor is not present, but construction crews encounter a cultural resource, all work shall stop temporarily within 50 feet of	rationale for the reduction and submit it to the Santa Clara Director of Community Development or Director's designee				

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CULTURAL AND TRIBAL CULTURAL RESOURCES					
the find until a qualified archaeologist in consultation with a qualified Native American monitor has been contacted to determine the proper course of action. The Director of Community Development shall be notified of any finds during the grading or other construction activities. Any human remains encountered during construction shall be treated according to the protocol identified in **CUL-6**.					
CUL-5: Evaluation and Data Recovery The City of Santa Clara's Director of Community Development shall be notified of any finds during the preliminary field investigation, grading, or other construction activities. Any historic or Native American cultural material identified in the project area during the preliminary field investigation and during grading or other construction activities shall be evaluated for eligibility for listing as a Candidate City Landmark or a California	All construction activity will stop within 50-feet of an archaeological discovery, the City of Santa Clara Director of Community Development or Director's designee will be notified, and a qualified archaeologist will inspect the find	During the preliminary field investigation, grading and construction phase	City of Santa Clara Director of Community Development or Director's designee	Review and approve the recommendation(s) of the qualified archaeologist	During the preliminary field investigation, grading, construction phase.

Historical Resource by a Secretary of the Interior-qualified archaeologist. If Native American cultural materials or historic resources are encountered, all activity within a 50-foot radius of the find shall be stopped, the Director of Community Development shall be notified, and a Secretary of the Interior-qualified archaeologist shall examine the find and record the site, including field notes, measurements, and photography, and document the find using the California Department of Parks and Recreation 523 series forms. The archaeologist shall make recommendations regarding eligibility as a Candidate City Landmark and/or a California Historical Resource, data recovery, curation, or other appropriate mitigation. Ground disturbance within the 50-foot radius can resume once these steps are taken and the Director of Community Development has concurred with the recommendations. Data recovery methods may include, but are not limited to, backhoe trenching, shovel test units, hand auguring, and hand-excavation. The techniques used for data recovery shall follow the protocols identified in the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan. Data recovery shall include excavation and exposure of features, field documentation, and recordation.	Examination of the find and recordation on DPR 523 Series forms along with a determination of eligibility and recommendation for data recovery or curation	While ground disturbing activities are halted and prior to returning to work	Secretary of the Interior-qualified archaeologist; City of Santa Clara Director of Community Development or Director's designee	Record on DPR forms with eligibility and curation recommendations; If the find does meet the definition of a historical, unique archaeological, or tribal cultural resource and cannot be avoided, review and authorize implementation appropriate treatment/ mitigation per treatment and mitigation plan and authorize construction to resume in the vicinity of the find after appropriate mitigation is completed; or Authorize construction to resume in the vicinity of the find if the find does not meet the definition of a historical, unique archaeological, or tribal cultural resources.	During grading and ground disturbing activities

MITIGATION	MONITORING AND REPORTING PROGRAM				
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CULTURAL AND TRIBAL CULTURAL RESOURCES					
CUL-6: Human Remains If human remains are discovered during the preliminary field investigation, excavation and/or grading, building, or other construction activities at the site, all activity within a 50-foot radius of the find will be stopped. The Santa Clara County Coroner will be notified and shall determine whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC) immediately. Once NAHC identifies the most likely descendants, the descendants will make recommendations regarding treatment and disposition with appropriate dignity, which will be implemented in accordance with section 15064.5(e) of the California Environmental Quality Act Guidelines. All actions taken under this mitigation measure shall comply with Health and Human Safety Code, section 7050.5(b).	All construction activity will stop within 50-feet of the discovery of human remains, the Santa Clara County Coroner and City of Santa Clara Director of Community Development or Director's designee will be notified immediately	Immediately upon discovery of human remains	City of Santa Clara Director of Community Development or Director's designee	The Santa Clara County coroner shall contact the NAHC if human remains are found and believed to the Native American. Authorize implementation of the treatment plan based on the recommendations of the MLD, if the remains are determined to be of Native American origin. Authorize construction to resume in the vicinity of the find when appropriate treatment is completed.	Upon discovery of human remains

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CULTURAL AND TRIBAL CULTURAL RESOURCES					
CUL-7: Site Security At the discretion of the City of Santa Clara's Director of Community Development, site fencing shall be installed on-site during the preliminary field investigation, grading, building, or other construction activities to avoid destruction and/or theft of potential cultural resources. The responsible qualified archaeologist, in consultation with a qualified Native American monitor, registered with the Native American Heritage Commission (NAHC) with an interest in the city of Santa Clara and that is traditionally and culturally affiliated with the geographic area, shall advise the Director of Community Development as to the necessity for a security guard. The purpose of the security guard shall be to ensure the safety of any potential cultural resources (including human remains) that are left exposed overnight. The Director of Community Development shall have the final discretion to authorize the use of a security guard at the project site.	The qualified archaeologist in consultation with the Native American monitor shall advise the City of Santa Clara Director of Community Development or Director's designee on the necessity for a security guard	During ground disturbing activities	City of Santa Clara Director of Community Development or Director's designee	Review and implement site security advice	During ground disturbing activities

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	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
CULTURAL AND TRIBAL CULTURAL RESOURCES					
CUL-8: Closing Cultural Resources Report Once all analyses and studies required by the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan (Plan) have been completed, the project applicant, or representative, shall prepare a closing cultural resources report summarizing the results of the preliminary field investigation, data recovery activities and results, and compliance with the Plan during all demolition, grading, building, and other construction activities. The report shall document the results of field and laboratory investigations and shall meet the Secretary of the Interior's Standards for Archaeological Documentation. The contents of the report shall be consistent with the protocol included in the project-specific Cultural Resources Treatment Plan. The report shall be submitted to the City of Santa Clara's Director of Community Development for review and approval prior to issuance of any certificates of occupancy (temporary or final). Once approved,	A closing cultural resources report shall summarize the findings documenting any cultural resources found during construction	Upon completion of monitoring and prior to issuance of any Certificates of Occupancy	City of Santa Clara Director of Community Development or Director's designee; Secretary of Interior-qualified archaeologist	Review and approve closing cultural resources report	Upon completion of cultural resources monitoring and prior to issuance of any Certificates of Occupancy
	Submittal of the closing cultural resources report to the NWIC	Upon finalization of the report	City of Santa Clara Director of Community Development or Director's designee	Obtain proof of submittal to NWIC	Upon finalization of the report

MITIGATION	MONITORING AND REPORTING PROGRAM				
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CULTURAL AND TRIBAL CULTURAL RESOURCES					
the final documentation shall be submitted to the Northwest Information Center at Sonoma State University, as appropriate.					
CUL-9: Curation Upon completion of the closing cultural resources report required by **CUL-8**, all recovered archaeological materials not identified as tribal cultural resources by the Native American monitor, shall be transferred to a long-term curation facility. Any curation facility used shall meet the standards outlined in the National Park Service Curation of Federally Owned and Administered Archaeological Collections (36 CFR 79). The project owner shall notify the City of Santa Clara's Director of Community Development of the selected curation facility prior to the issuance of any certificates of occupancy (temporary or final). To the extent feasible, and in consultation with the Native American representative, all recovered Native American/tribal cultural resources and artifacts shall be reburied on-site in an area that is unlikely to be disturbed again. Treatment of materials to be	All archaeological materials not identified as tribal cultural resources shall be curated at a long-term collections facility	Upon completion of the closing cultural resources report	Project Applicant/ Owner	Notification of selection of collections facility submitted to City of Santa Clara Director of Community Development or Director's designee.	Prior to issuing Certification of Occupancy
	Native American and tribal cultural resources should be reburied on-site, if feasible	Prior to issuance of Certificate of Occupancy	City of Santa Clara Director of Community Development or Director's designee	Confirm with Native American monitor and MLD (if applicable)	Prior to issuing Certification of Occupancy

MITIGATION	MONITORING AND REPORTING PROGRAM				
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	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
CULTURAL AND TRIBAL CULTURAL RESOURCES					
curated shall be consistent with the protocols included in the project-specific Cultural Resources Identification, Monitoring, and Treatment Plan. All archaeological materials recovered during the data recovery efforts shall be cleaned, sorted, catalogued, and analyzed following standard archaeological procedures, and shall be documented in a report submitted to the City of Santa Clara's Director of Community Development and the Northwest Information Center (NWIC).					
Impact 4.5-b Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?					
CUL-1 through **CUL-9** (See impact 4.5-a for mitigation)					
Impact 4.5-c Would the project disturb any human remains, including those interred outside of formal cemeteries?					
CUL-1 through **CUL-9** (See impact 4.5-a for mitigation)					
Impact 4.5-e Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?					
CUL-1 through **CUL-9** (See impact 4.5-a for mitigation)					

MITIGATION	MONITORING AND REPORTING PROGRAM				
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	Method of Compliance or Mitigation Action	**Timing of Compliance**	**Oversight Responsibility**	**Actions/Reports**	**Monitoring Timing or Schedule**
GEOLOGY AND SOILS (PALEONTOLOGY)					
Impact 4.7-f Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?					
GEO-1: Prior to the commencement of construction, the applicant shall secure the services of a qualified paleontological specialist. The specialist shall prepare a Worker Environmental Awareness Program (WEAP) to instruct site workers of the obligation to protect and preserve valuable paleontological resources for review by Santa Clara Community Development Department. This program shall be provided to all construction workers via a recorded presentation and shall include a discussion of applicable laws and penalties; samples or visual aids of resources that could be encountered; 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. The applicant shall secure the services of a qualified professional	Secure services of an on-call qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology 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	The qualified professional paleontologist shall be on-call prior to the commencement of construction. As soon as suspected fossils are encountered and determined to be significant and avoidance is not feasible, the paleontologist will develop and implement an excavation and salvage plan in	Paleontological Resource Monitoring Report: City of Santa Clara Director or Director's designee	Review and approve the paleontological resource monitoring report and confirm disposition of significant fossil finds	Prior to completion of construction

MITIGATION	MONITORING AND REPORTING PROGRAM				
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	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
GEOLOGY AND SOILS (PALEONTOLOGY)					
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 supervisors 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 will 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		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			

MITIGATION	MONITORING AND REPORTING PROGRAM				
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	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
GEOLOGY AND SOILS (PALEONTOLOGY)					
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 Director or Director's designee of the Santa Clara Community Development Department for review and approval. The report and any fossil remains collected shall be submitted to a scientific institution with paleontological collections.	The qualified paleontological specialist will prepare a Worker Environmental Awareness Program	Prior to the commencement of construction	City of Santa Clara Director or Director's designee	Review and approve the Worker Environmental Awareness Program	Prior to the commencement of construction

MITIGATION	MONITORING AND REPORTING PROGRAM				
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	Method of Compliance or Mitigation Action	Timing of Compliance	Oversight Responsibility	Actions/Reports	Monitoring Timing or Schedule
GREENHOUSE GAS EMISSIONS					
Impact 4.8-a Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?					
GHG-1: The project owner shall use renewable diesel for 100 percent of total energy use by the emergency backup generators, and only use ultra-low sulfur diesel (ULSD) as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. The City of Santa Clara Community Development Department (CDD) may grant temporary relief from the 100 percent renewable diesel requirement if the project owner can demonstrate a good faith effort to comply with the requirement and that compliance is not practicable. The project owner shall provide an annual report of the status of procuring and using renewable diesel to the director, or director's designee, of the City of Santa Clara CDD demonstrating compliance with the mitigation measure.	Use renewable diesel as the primary fuel and ULSD as a secondary fuel in the event of supply challenges or disruptions	Following commencement of project operation then annually for the life of the project	Director of Electric Utility Department or Director's designee	The project owner shall provide an annual report of renewable diesel supply and distribution	Following commencement of project operation then annually for the life of the project
GHG-2: The project owner shall participate in SVP's Large Customer Renewable Energy (LCRE) Program or other renewable energy program that	Ensure that 100 percent of the renewable electricity	Prior to local approval of project entitlements and	Director of Electric Utility Department or	The project owner shall provide proof of enrollment in SVP's LCRE or other	Upon commencing project operation and annually for

MITIGATION	MONITORING AND REPORTING PROGRAM				
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GREENHOUSE GAS EMISSIONS					
accomplishes the same objective as SVP's LCRE Program for 100 percent carbon-free electricity, or (2) purchase renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity. During operation, the project owner shall provide documentation to the director, or director's designee, of the City of Santa Clara Electric Utility Department of initial enrollment and shall submit annual reporting to the director, or director's designee, of the City of Santa Clara Electric Utility Department documenting either continued participation in SVP's LCRE Program of documentation that alternative measures continue to provide 100 percent carbon-free electricity as verified by an independent third-party auditor specializing in greenhouse gas emissions.	purchased is covered by carbon-free resources	during the operational phase	Director's designee	acceptable instrument and annual report, with verification by a qualified third-party auditor specializing in greenhouse gas emissions	the life of the project
Impact 4.8-b Would the project conflict with an applicable plan, policy or regulation adopted for the purpose or reducing the emissions of greenhouse gasses?					
GHG-1 and **GHG-2** (See impact 4.8-a for mitigation)					

MITIGATION	MONITORING AND REPORTING PROGRAM				
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HAZARDS AND HAZARDOUS MATERIALS					
Impact 4.9-d Would the project be located on a site that is included of a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?					
HAZ-1: Prior to issuance of demolition permits, a lead-based paint (LBP) visual inspection and pre-demolition survey, including sampling and testing of suspect materials, shall be conducted of on-site buildings to determine the presence of LBP. The survey shall be conducted by a contractor with California Department of Public Health (CDPH) Lead Related Construction (LRC) certified personnel as required by CDPH regulations. The findings of the LBP survey shall be submitted to the Santa Clara City Fire Department Hazardous Materials Division for review.	Plan and implement a pre-demolition LBP survey of the on-site buildings. Prepare a report of LBP survey findings and submit it to the Santa Clara City Fire Department Hazardous Materials Division for review.	Prior to issuance of demolition permits, and after identification of any identified LBP contaminated materials. All LBP surveys conducted prior to start of Project construction	Santa Clara City Fire Department Hazardous Materials Division	Review submitted documentation/ report to verify presence of LBP onsite after pre-demolition survey.	After LBP pre-demolition survey and prior to issuance of demolition permits. Prior to start of Project construction.
HAZ-2: Prior to issuance of demolition or grading permits, the project applicant shall prepare a Site Management Plan (SMP) to guide activities during demolition, excavation, and initial construction to ensure that potentially contaminated soils are identified, characterized, removed, and disposed of properly.	Prepare and implement a SMP and HSPs for the site and submit the SMP and HSPs to the Santa Clara County Hazardous Materials Compliance Division and the Santa Clara City Fire Department	Prior to issuance of demolition or grading permits, prior to soil and groundwater sampling, and prior to the	Santa Clara County Environmental Services Department and the Santa Clara City Fire Department Hazardous	Review and approve submitted SMP and HSPs Review submitted documentation/report of results of soil and groundwater site characterization to	Prior to issuance of any grading, demolition, or building permits, prior to and during handling and removal of any identified contaminated soil

MITIGATION	MONITORING AND REPORTING PROGRAM				
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HAZARDS AND HAZARDOUS MATERIALS					
The purpose of the SMP is to establish appropriate management practices for handling impacted soil or other materials that may be encountered during construction activities. The SMP shall be reviewed and approved by the Santa Clara County Environmental Services Department and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division prior to any work on the site, including prior to soil and groundwater sampling. The SMP shall be implemented during project demolition and construction and shall include, but shall not be limited to, the following components: • A detailed discussion of the site background. • Prior to any onsite work, Health and Safety Plans (HSPs) for the Project shall be prepared by all contractors and subcontractors that will be working at the project site and incorporated in the SMP. The HSPs shall be prepared by an	Hazardous Materials Division for review and approval. Submit report of results of site characterization to Santa Clara County Hazardous Materials Compliance Division and Santa Clara City Fire Department Hazardous Materials Division for review. Contact the Santa Clara County Hazardous Materials Compliance Division and/or the California Department of Toxic Substances Control for characterization and remediation oversite if soil or groundwater contaminants exceeding applicable screening levels are identified.	start of and during construction	Materials Division Santa Clara County Hazardous Materials Compliance Division and/or the California Department of Toxic Substances Control	verify presence of absence and levels of contamination. Provide regulatory oversite for site characterization and remediation in the event of identification of contaminated soil or groundwater Provide verification of regulatory compliance to Santa Clara City Fire Department Hazardous Materials Division and Santa Clara County Hazardous Materials Compliance Division	or groundwater, and prior to the start of and during construction

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HAZARDS AND HAZARDOUS MATERIALS					
industrial hygienist. The HSPs shall be specific to each of the contractors' or subcontractors' scopes of work and based upon the known environmental conditions for the site prior to project construction. The HSPs shall be updated as needed if site conditions change significantly, such as the discovery of contaminated soil or groundwater. The HSPs shall be approved by the Director or Director's designee with the Santa Clara County Environmental Services Department and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division, and implemented under the direction of a Site Safety and Health Officer. Copies of the approved HSPs shall be kept at the project site. • Description of soil and groundwater testing, which shall include (but not be limited to) the collection of soil samples and groundwater samples and					

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HAZARDS AND HAZARDOUS MATERIALS					
analyses for volatile organic compounds (VOCs) and any other contaminants identified in previous environmental studies in the soil and groundwater and lead and organochlorine pesticides in the soil to verify presence of absence of remnant or unknown soil or groundwater contamination. This soil and groundwater characterization shall be performed prior to initiation of project construction. • Protocols for sampling at the site to verify or rule out a vapor encroachment conditions at the site and within the buildings to be demolished and, if verified, for remediation of vapor encroachment conditions within the existing building prior to demolition and to prevent it in the proposed structures. • Protocols for sampling of soil and groundwater to facilitate the profiling of the soil and groundwater for appropriate off-site disposal or reuse, and for construction worker safety, dust					

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HAZARDS AND HAZARDOUS MATERIALS					
mitigation during demolition and construction and potential exposure of contaminated soil or groundwater to future users of the site prior to project construction. • Procedures to be undertaken in the event that contamination is identified above action levels or previously unknown contamination is discovered prior to or during project demolition or construction; • Notification procedures if previously undiscovered significantly impacted soil or groundwater, or free fuel product is encountered during demolition or construction; • Sampling and laboratory analyses of excess soil requiring disposal at an appropriate off-site waste disposal facility; • Procedures and protocols for the safe storage, stockpiling, and disposal of contaminated soils; and • Protocols to manage groundwater, including					

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HAZARDS AND HAZARDOUS MATERIALS					
segregation or treatment of contaminated groundwater, if necessary, that may be encountered during trenching or subsurface excavation activities. If there are no contaminants identified on the project site that exceed applicable screening levels for construction workers and residential users published by the Regional Water Quality Control Board (RWQCB), California Department of Toxic Substances Control (DTSC), or California Environmental Protection Agency, the SMP does not need to be submitted to an oversight agency and instead only needs to be submitted to the Santa Clara County Environmental Health Department and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division for approval prior to issuance of a grading permit and prior to conducting any demolition activities. If contaminants are identified at concentrations exceeding applicable					

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HAZARDS AND HAZARDOUS MATERIALS					
screening levels, the project applicant shall obtain regulatory oversight from Santa Clara County Department of Environmental Health or the DTSC under a Site Cleanup Program. The SMP and planned remedial measures shall be reviewed and approved by the Santa Clara County Department of Environmental Health Hazardous Materials Compliance Division or DTSC. A copy of the SMP shall be submitted to the Director or Director's designee with the Santa Clara County Environmental Services Department and, the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division. Copies of the approved SMP shall be kept at the project site. Any contaminated soils identified by testing conducted in compliance with the SMP and found in concentrations above established thresholds shall either be removed and disposed of according to California Hazardous Waste Regulations or the contaminated portions of the site shall be capped beneath the planned					

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HAZARDS AND HAZARDOUS MATERIALS					
development under the regulatory oversight of the Santa Clara County Hazardous Materials Compliance Division or the DTSC. Contaminated soil excavated from the site shall be hauled off-site and disposed of at a licensed hazardous materials disposal site.					
HAZ-3: Prior to the issuance of grading permits, soil and/or groundwater samples shall be taken in areas where disturbance is anticipated to determine if contaminated soils or groundwater with concentrations above established construction/trench worker thresholds may be present due to historical agricultural use and from historical leaks and spills. Sampling shall be conducted per the protocols outlined in the approved project SMP. Once the soil sampling analysis is complete, a report of the findings shall be submitted to the appropriate agencies per the requirements of the SMP.	Conduct soil and groundwater site characterization prior to initiation of project construction per the plan and protocols outlined in the SMP. Prepare a report with the results of site characterization for submittal to Santa Clara County Hazardous Materials Compliance Division and Santa Clara City Fire Department Hazardous Materials Division for review.	Prior to issuance of demolition or grading permits and prior to the start of construction	Santa Clara County Environmental Services Department and the Santa Clara City Fire Department Hazardous Materials Division	Verify receipt of site characterization report.	Prior to issuance of demolition or grading permits and prior to the start of construction

MITIGATION	MONITORING AND REPORTING PROGRAM				
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	Method of Compliance or Mitigation Action	**Timing of Compliance**	**Oversight Responsibility**	**Actions/Reports**	**Monitoring Timing or Schedule**
TRANSPORTATION					
Impact 4.17-b Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?					
TRANS-1: The project shall implement a Transportation Demand Management (TDM) program sufficient to demonstrate that vehicle miles travelled (VMT) associated with the project would be reduced to 14.14 or less per employee. The TDM program shall include, but is not limited to, the following measures, which have been determined to be a feasible method for achieving the required VMT reduction: 1. Commute Trip Reduction Marketing and Education. This TDM measure shall educate and encourage employees to use transit, shared rides, and active modes of transportation to lower the number of single occupancy vehicle trips. 2. Alternative Transportation Benefits. This TDM measure shall provide general commuter benefits to employees, which would include financial subsidies	Preparation of a Transportation Demand Management (TDM) plan that includes a requirement that at a minimum, the project owner shall require that 100 percent of employees participate in the commute trip reduction/education program, 10 percent of employees would be eligible for alternative transportation benefits, and 4 percent of employees would participate in the	Prior to the issuance of any City of Santa Clara Public Works occupancy permits.	City of Santa Clara Director of Community Development or Director's designee.	Review and approve Transportation Demand Management plan.	Prior to the issuance of any City of Santa Clara Public Works occupancy permits.

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TRANSPORTATION					
or pre-tax deductions for transit, carpooling, and vanpooling activities to encourage employees to use alternative transportation modes. 3. Ride-Sharing Program. This TDM measure shall encourage employees to carpool with other employees and through ride matching services to ensure employees are connected with other commuters traveling in the same direction. Prior to the issuance of an occupancy permit, the TDM program shall be submitted and approved by the City of Santa Clara Director of Community Development and shall be monitored annually to gauge its effectiveness in meeting the required VMT reduction. The TDM program shall establish an appropriate estimate of initial vehicle trips generated by the occupant of the proposed project and shall include the conducting of driveway traffic counts annually to measure peak-hour entering and exiting vehicle	ride-sharing program.				

MITIGATION	MONITORING AND REPORTING PROGRAM				
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TRANSPORTATION					
volumes. The volumes shall be compared to trip thresholds established in the TDM program to determine whether the required reduction in vehicle trips is being met. The results of annual vehicle counts shall be reported in writing to the Director of Community Development. If TDM program monitoring results show that the trip reduction targets are not being met, the TDM program shall be updated to identify replacement and/or additional feasible TDM measures to be implemented. The updated TDM program shall be subject to the same approvals and monitoring requirements listed above.					

Source: California Energy Commission. Draft Environmental Impact Report for the Bowers Backup Generating Facility. August 2023.

Appendix A

Project's Jurisdictional and Generating Capacity Analysis

Appendix A: Project's Jurisdictional and Generating Capacity Analysis

The Bowers Data Center (BDC) and Bowers Backup Generating Facility (BBGF), collectively called the "project", as proposed by GI Partners (applicant) would include 32 renewable diesel-fueled standby emergency backup generators (gensets) that would provide emergency backup power supply for the project only during interruptions of electric service delivered by Silicon Valley Power (SVP) via Pacific Gas and Electric Company (PG&E) transmission lines. The gensets (generators) would be electrically isolated from the PG&E electrical transmission system with no means to deliver electricity offsite of BDC (the distribution line would only allow power to flow in one direction—from PG&E electrical transmission line to the project).

The 32 gensets, which include 8 redundant and admin/life safety gensets, would have a nameplate output capacity of 3.0 megawatt (MW). Thus, the maximum generating capacity of this project would not exceed 72 MW. This includes the critical information technology (IT) load of the servers and server bays, the cooling load of the IT servers and bays, and the facility's ancillary electrical and telecommunications equipment operating loads to support the data center customers.

The California Energy Commision (CEC) staff (staff) evaluated and concluded that the net deliverable or useable electricity capacity is more than 50 MW and less than 100 MW from BDC genset. The following provides a summary of the factors supporting this conclusion:

1. The diesel-fueled reciprocating engine gensets use a thermal energy source.
2. The gensets and the associated project equipment that they would support would all be located on a common property under common ownership sharing common utilities. The 32 gensets should be aggregated and considered as one thermal power generating facility with a generation capacity of greater than 50 MW.
3. Jurisdictional analyses are based on the net MWs that can be delivered for "use" (i.e., to a data center facility or the electricity grid), not the gross or nameplate rating. Net capacity ratings are never larger than gross capacity ratings. This project's maximum gross and nameplate capacity ratings, including all the redundant gensets, would not reach 100 MWs (72 MW) and therefore, its maximum net capacity would also be less than 100 MW and would not exceed 72 MW.
4. The gensets would be exclusively connected to the BDC buildings and would not be capable of delivering electricity to any off-site user or to the electrical transmission grid. The proposed redundancies built into the design of the facility are to ensure performance reliability.

The following paragraphs provide the detailed analysis explaining how staff reached the conclusion that the project is within the CEC's jurisdiction:

1. BBGF is a thermal power plant under the statutory definition.

The Warren-Alquist State Energy Resources Conservation and Development Act (Public Resources Code, section 25000 et. seq) defines a thermal power plant "as any stationary or floating electrical generating facility using any source of thermal energy, with a generating capacity of 50 megawatts or more, and any facilities appurtenant thereto" (Pub. Resources Code, § 25120). BDC's backup generating facility, the BBGF, would be made up of gensets that use diesel engines to convert the thermal energy in the renewable diesel fuel[1] into electricity via a rotating generator, and, thus, each genset is an electrical generating device that uses a source of thermal energy. The facility proposes to use 32 such gensets to service BDC.

BBGF's 32 gensets, and the associated data center that they would support, would all be located on a common property under common ownership sharing common utilities. The gensets would operate to provide backup electricity to the project when its connection to the grid is lost. The genset system configuration includes a 4-to-make-3, meaning that for every four gensets that would support load in the event of a utility failure, there is one redundant genset. Any genset can function either as a back-up to the grid or a back-up to the grid back-up gensets. Therefore, there is no functional difference in the type of engine or generator between each genset. All the gensets at the project would share a common trigger for operation during an emergency: the transfer switch isolating BDC from the grid. Thus, because the project is stationary, under common ownership sharing common utilities, uses a fuel source to generate thermal energy, and has a generating capacity of more than 50 MW, the project meets the statutory definition of a thermal power plant.

Note that the total generating capacity of this data center, even if all the primary and redundant gensets operate at full load simultaneously, remains below 100 MW. This qualifies this project for a SPPE.

2. California Code of Regulations, Title 20, section 2003 requires the generating capacity to be the net generating capacity.

For BDC, the data center would be installed during the initial construction of the project by the project owner, but there is no specific timeline proposed for when the data center would need the full capacity of gensets; the exact timing of individual leases that fill

1 Renewable diesel fuel is composed of a mixture of hydrocarbons, containing chemical energy. When ignited, this chemical energy is converted to thermal energy.

server bay space is subject to the market decisions of disparate customers. Therefore, it may be years before the data center is fully leased and requiring the full capacity of the gensets. Nevertheless, for purposes of this analysis, staff assumes full load will eventually be reached.

California Code of Regulations, Title 20, section 2003 specifies how the CEC calculates "generating capacity" for jurisdictional determinations, including the 50 MW threshold for the definition of a thermal power plant under Public Resources Code, section 25120. As mentioned above, jurisdictional analyses are based on the net MWs that can be delivered for "use" (i.e., to a data center facility or the electricity grid), not the gross or nameplate rating. Net capacity ratings are never larger than gross capacity ratings. This project's maximum gross and nameplate capacity ratings, including all the redundant gensets, would not reach 100 MWs (72 MW) and therefore, its maximum net installed capacity would also be less than 100 MW and would not exceed 72 MW.

Thus, BBGF's gross and net capacities are below 100 MW, even when considering the combined MW capacities of all the primary and redundant gensets operating at full load simultaneously. Therefore, BBGF qualifies for a SPPE.

References

GI Partners 2022e – GI Partners. (TN 245769). Bowers Backup Generating Facility Application for SPPE Main, dated August 31, 2022. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-SPPE-01

Appendix B

Silicon Valley Power's Transmission System, Related Pacific Gas and Electric Company's Transmission System and Emergency Operation

Appendix B: Silicon Valley Power's Transmission System, Related Pacific Gas and Electric Company's Transmission System and Emergency Operation

This appendix includes a discussion of the Silicon Valley Power's (SVP) and Pacific Gas and Electric Company's (PG&E) electrical system reliability (including supporting information) and emergency operations.

Electrical System Reliability

Apart from readiness testing and maintenance, the Bowers Backup Generating Facility (BBGF) emergency backup generators (gensets) are designed to operate only when the electric system is unable to provide power to the Bowers Data Center (BDC). To understand the potential for the gensets to operate during emergencies, one needs to know the conditions under which the electric system is unable to provide power to BDC. There are essentially five conditions that might result in the operation of the gensets:

1. A fault occurs (power supply interruption) or planned maintenance is required on the equipment interconnecting BDC to the SVP 60 kV loop system, and BDC's electricity needs cannot be met.
2. An outage or fault occurs on the utility transmission system, and PG&E is unable to deliver power to SVP system which provides electricity to BDC.
3. A Public Safety Power Shutoff (PSPS) impacts the utility transmission system, and BDC is not able to receive power from SVP.
4. An energy shortage crisis similar to the one in late Summer 2020 where the utility for transmission (e.g. PG&E) is unable to supply electricity to SVP or BDC's operators voluntarily disconnect from the utility and rely on gensets to provide the needed electricity.
5. The gensets could also run when the utility/the California Independent System Operator (CAISO) calls for participants in the Emergency Load Reduction Program (ELRP) or Demand Side Grid Support (DSGS) programs to reduce loads.

The SVP 60 kilovolt (kV) loop systems are designed to provide reliable electric service to customers even under contingency conditions, when one part of the electric network is not functioning. The interconnections for data centers, like BDC, on the SVP 60 kV system are designed with redundant equipment throughout, such that there is no single point of failure. It takes at least two contingencies before customers on the 60 kV system lose power and, in the case of data centers, would instead rely on gensets. According to SVP, double outages on the 60 kV loop systems are extremely rare, and the data supports this.

SVP provided a list of the outages on its 60 kV system over the last 12 years. There were

41 outages, only six of which resulted in customers being without power. This means that in 35 of these outages the redundant design of the system prevented customers from being without power; data centers would not be isolated from the grid and would not have relied on their gensets.

Only four outages from January 1, 2009, to June 16, 2021, affected data centers in the SVP service territory. One approximately 7.5-hour outage on May 28, 2016, which was the result of two contingencies (a balloon and a breaker failure), affected two data centers. Another 12-minute outage on December 2, 2016, affected four data centers. Two different outages on August 16, 2020 (both outages due to multiple lightning strikes), with one approximately 2.5 hours and the other one approximately 10.5 hours, affected data centers at various locations on the associated loops.

SVP's root-cause analysis of every outage resulted in changes in maintenance procedures to ensure that breakers are reset before power is restored to a portion of the system that was down for maintenance. Outages would be extremely rare, and the consequences or effects on the fleet of data centers almost negligible.

Wildfire policies could impact SVP's ability to supply power to customers if curtailments on the PG&E system interrupt SVP's access to its remote electricity supplies. A PSPS essentially de-energizes power lines to prevent the lines from causing or being damaged by wildfires. The PSPSs to date have been generally limited to high-fire risk zones and only implemented under special conditions. While the SVP service territory and the SVP's primary PG&E bulk transmission line interconnection points are not in high-risk zones, a line de-energization in one of PG&E's high-risk fire zones to reduce the risk of lines causing a wildfire could reduce the SVP electricity transmission access and supply through PG&E lines.

The future impact of PSPSs on the PG&E system are not currently known. Two broadly implemented PSPSs in the PG&E service territory during the fall of 2020 had no impact on SVP and its customers. As the utilities and regulators try to balance the costs and benefits of PSPSs by finetuning and targeting the implementation, the most likely outcome is that future PSPSs will have even fewer potential effects on SVP service territory. SVP has the ability to produce about 200 megawatts (MW) through generators located locally and can adapt to planned outages on the PG&E system just as it has reacted or recovered from unplanned outages in the past to maintain reliable and high-quality electricity supplies to its service territory customers.

Energy shortages, like those that occurred on two occasions in 2020, could prevent a utility from supplying BDC's electricity needs and BDC would then rely on gensets. Recently, the California Public Utilities Commission (CPUC) adopted a new five-year pilot program (D.21-03-056), in effect through 2025, that orders PG&E, Southern California

Edison, and San Diego Gas & Electric to administer the Emergency Load Reduction Program (ELRP). Data centers could voluntarily participate in ELRP and, in the event of an energy shortage emergency, these utilities would disconnect from the grid and use their on-site gensets to supply electricity. The ELRP provides a mechanism for utilities to measure the load reduction and provide financial compensation to the participants. The ELRP does not affect the likelihood of emergency events. The last time an emergency event occurred, like those in 2020, was 2001. Given the state's efforts to address the causes of past energy emergencies, we expect energy emergencies to continue to be rare events. In addition, in the text below, the California Energy Commission (CEC) staff discussed that BDC would not be online in time to be part of the first phase of the ELRP, and it is less likely that these types of measures will be necessary beyond the immediate future. ELRP has been dispatched multiple times in the summers of 2021 and 2022, lowering electricity demand statewide during critical conditions. Lastly, it is unclear whether the United States Environmental Protection Agency (U.S. EPA) would consider participation in such a program to be an emergency use and, thus, allowed under federal permit restrictions. For these reasons staff does not consider the existence of the ELRP to have any effect on the likelihood of the BBGF backup generators operating outside of testing and maintenance.

Still, staff expects the BBGF gensets to be required to supply data center loads only rarely. The gensets would not be used when maintenance is performed on the transmission line or substation. Also, BBGF gensets would not be interconnected to the transmission or distribution grid and would not provide power to the grid.

Emergency Operations

Historical Power Outage Frequency

This section provides information on the likelihood of an interruption of SVP's electrical supply that would trigger the emergency operation of the gensets at the BBGF. More than 12 years of historical data of past outages of data centers in the SVP service territory is available. Staff has used this data to estimate the frequency and duration of reasonably foreseeable, future electrical outages that could trigger emergency operations. Emergency operations would be unplanned and infrequent.

Reliability statistics for all electric customers served by SVP appears within the 2018 Integrated Resource Plan (IRP), and to expand on this information, staff explored specifically how data centers in SVP's territory have been historically affected by outages.

The 2018 IRP states, "SVP's electric system experiences approximately 0.5 to 1.5 hours of outage time per customer per year. This compares favorably with other utilities in California with reliability factors ranging from 1.0 to 2.5 hours outage per customer per year" (SVP 2018a). The 2018 IRP for SVP reports the Average Service Availability Index

(ASAI), defined as the customer-minutes-available divided by the total customer-minutes, expressed as a percentage, and the ASAI has been 99.979% or higher in each recent year, with an average of 99.989 over the past seven years. The System Average Interruption Frequency Index (SAIFI) (interruptions per customer) shows that one or fewer outages have occurred, on average, for all customer types annually (SVP 2018a). This data for all customers is summarized in **Table B-1**.

TABLE B-1 SVP RELIABILITY STATISTICS FOR ALL CUSTOMER TYPES

Year	ASAI (%)	SAIDI (minutes)	SAIFI (interruptions per customer)	Total Outages (number)
2012	99.994	29.34	0.48	67
2013	99.991	47.33	0.49	69
2014	99.989	56.6	0.48	80
2015	99.986	73.96	0.59	123
2016	99.993	36.29	0.5	123
2017	99.979	109.08	1.03	195
2018	99.992	42.61	0.41	132

Notes:
ASAI (%): Average Service Availability Index - (customer minutes available / total customer minutes, as a %).
SAIDI (minutes): System Average Interruption Duration Index - (average minutes interrupted per customer for all customer).
SAIFI (number): System Average Interruption Frequency Index - (number of interruptions per customer for all customers).
Source: SVP 2018a.

The proposed BDC would be a large customer of SVP that would receive better-than-average reliability compared to all SVP customers by including a dedicated onsite substation that would be directly served by SVP's looped 60 kV system. Staff reviewed the frequency and duration of known data center customers' outages, as provided by SVP as part of the proceeding from CA3 (DayZenLLC 2021), to discern how redundant features allow SVP's system to provide greater reliability to data centers when compared with average SVP customers.

Project-specific design factors include the site-specific substation that would connect BDC to the SVP looped 60 kV system, a limited number of commercial customers on the looped 60 kV system, redundant transformers to supply BDC, and BDC's proposed uninterruptible power supply (UPS) battery system to carry critical loads during short-term electric service disruptions or transients.

As mentioned above, there were 41 outages on the SVP 60 kV system over 12 years (January 1, 2009 to June 16, 2021), only six of which resulted in customers being without power. Of these outages, only four of them affected data centers in the SVP service

territory. These customers are all served by a distribution system that includes "looped" lines that can provide alternate flow paths for power flow to data centers. Thus, in general, it takes more than one 60-kV system path failure to cause a power outage at a data center.

BAAQMD's Review of Data Center Diesel Genset Engine Operations

Scoping comments as part of the proceeding from CA3 (21-SPPE-01) from the Bay Area Air Quality Management District (BAAQMD) provided a review of data centers that initiated the operation of diesel genset engines for "non-testing/non-maintenance" purposes to inform staff's consideration of scenarios of emergency backup power generation operations beyond routine testing and maintenance (BAAQMD 2021b). BAAQMD's review covers a recent 13-month period (September 1, 2019, to September 30, 2020) that spans different types of emergency situations across California.

There are 66 data centers under the jurisdiction of BAAQMD with staff at BAAQMD gathering information from 45 of those data center facilities. The attachment to BAAQMD's scoping comments listed 20 facilities that reported some level of "non-testing/non-maintenance" diesel genset engine use in the 13-month period (CEC 2021a).

The scope of BAAQMD's review can be summarized as follows:

- Period covered: 13 months (9,504 hours)
- Facilities (data centers) under BAAQMD jurisdiction: 66 data centers
- Facilities from which information was collected: 45 data centers
- Facilities responding with some "non-testing/non-maintenance" use: 20 data centers
- Permitted genset engines at the 20 facilities responding: 288 engines
- Installed generating capacity of genset engines at the 20 facilities responding: 686.5 MW
- Information was not provided for the 25 facilities that did not report any non-testing/non-maintenance use or the other 21 facilities under BAAQMD's jurisdiction that were not surveyed in this data gathering effort.

The BAAQMD normally issues permits for diesel genset engines, and the permit requires each owner or operator to maintain records of the number of operating hours for each "emergency" and the nature of the emergency. The types of events within BAAQMD's review period include a Governor-proclaimed state of emergency, other outages, power quality events, and human errors. The data shows that 75 percent of all genset engine-hours occurred either during the August 2020 Governor-proclaimed state of emergency or the subsequent heat event in September 2020.

For the 20 data centers listed in BAAQMD's review, the total permitted and installed generating capacity of these facilities equals 686.5 MW, across 288 individual genset engines. The total amount of "non-testing/non-maintenance" runtime of all these 288 genset engines amounted to approximately 1,877 engine-hours of operation.

Table B-2 summarizes the runtimes found by BAAQMD's review for each of the 20 data centers. BAAQMD's review identified one data center facility that ran diesel gensets for approximately 400 hours for non-testing/non-maintenance purposes during this time. **Table B-2** shows that this facility has over 40 individual genset engines permitted at the site for an average runtime of about 10 hours per engine. The different data centers within BAAQMD's review showed that nine of the 20 facilities responding had fewer than 50 hours of operating one or more diesel genset engines for non-testing/non-maintenance purposes.

TABLE B-2 BAAQMD'S REVIEW OF NON-TESTING/ NON-MAINTENANCE OPERATION (ENGINE-HOURS)

Data Center	# of Permitted Genset Engines	# of Genset Engines with Non-Testing/ Non-Maintenance Operations	Sum of Non-Testing/ Non-Maintenance Operations (Engine-Hours)	Average Hours of Operations per Genset Engine Used
1	10	10	83	8.3
2	5	5	77	15.3
3	6	6	108	18.0
4	44	44	22	0.5
5	3	2	11	5.5
6	6	6	219	36.5
7	24	24	202	8.4
8	26	24	10	0.4
9	5	5	26	5.2
10	41	40	401	10.0
11	14	11	75	6.8
12	11	11	275	25.0
13	5	5	85	17.0
14	22	8	28	3.4
15	8	7	98	14.0
16	17	4	10	2.4
17	2	2	4	2.0
18	8	6	18	3.0
19	6	6	24	4.0
20	25	17	103	6.0
Total	**288**	**243**	**1,877**	**Max. 36.5**

Sources: BAAQMD 2021b, Energy Commission staff analysis of data from BAAQMD

From the runtimes of all the genset engines at all facilities in BAAQMD's review, **Table B-2** estimates that the average genset engine ran no more than 36.5 hours over the 13-

month period. Staff also found that no single engine within BAAQMD's review ran for more than 50 hours overall for "non-testing/non-maintenance" purposes.

Staff used the data in BAAQMD's review (BAAQMD 2021b) and a clarifying email of BAAQMD results (CEC 2021a) to estimate the power production during "non-testing/non-maintenance" diesel genset engine use and found that approximately 1,575 megawatt hours (MWh)were generated during this 13-month (9,504 hour) period. The power generated by these genset engines presumably displaced grid service for the on-site data center facility electrical demand. Based on the installed generating capacity of 686.5 MW partially operating within the 13-month record, the genset engines in BAAQMD's review that did operate would have an extremely low capacity-factor of 0.024 percent [0.024 percent = 1,575 MWh / (686.5 MW * 9,504 hours)]. This capacity factor is only considering the facilities that had genset engines that ran during this 13-month period. Twenty-five of the 45 facilities reporting had zero hours of engine runtime.

Consideration of Extreme Events. California experienced different types of emergency situations within the 13-month period (September 1, 2019, to September 30, 2020) of BAAQMD's review. This period included the expansion of PG&E's PSPS program, severe wildfires, several California Independent System Operator (CAISO) declared emergencies, and winter storms. From August 14, to 19, 2020, California experienced excessive heat. On August 16, 2020, Governor Newsom proclaimed a state of emergency because of the extreme heat wave in California and surrounding western states. This was a one in 30-year weather event that resulted in the first system-wide power outages California had seen in 20 years. In addition to the extreme heat wave in mid-August, high temperatures and high electricity demand occurred over the 2020 Labor Day weekend, especially on Sunday, September 6, and Monday, September 7, 2020 (CAISO 2021). Thus, the data set provided is not necessarily representative of an average 13-month period from which one could extrapolate average genset facility use into the future.

Table B-3 summarizes how these extreme events influenced the runtimes found by BAAQMD's review for each of the 20 data centers.

Table B-3 shows that most "non-testing/non-maintenance" diesel genset engine use identified by BAAQMD's review (over 1,400 engine-hours out of 1,877 engine-hours) occurred either during the August 2020 Governor-proclaimed state of emergency or the subsequent heat event in September. Excluding these extreme events results in 473.7 engine-hours of "non-testing/non-maintenance" diesel genset engine use during other dates, or fewer than two hours per engine for all 288 engines in the review. Out of the 20 data centers that ran genset engines for "non-testing/non-maintenance" purposes, the 473.7 engine-hours of runtime outside of extreme events was spread across 10 data centers out of the 45 data centers covered by BAAQMD's review.

Similarly, staff estimates that over 50 percent of the overall power produced by the genset engines in BAAQMD's review (at least 843 MWh of 1,575 MWh) occurred during the Governor-proclaimed state of emergency, and another 25 percent of the power produced was attributable to unknown days in the period. Staff's analysis of actual power produced during each day of the 13-month record appears in **Table B-4**.

TABLE B-3 EXTREME EVENTS: NON-TESTING/NON-MAINTENANCE OPERATION (ENGINE-HOURS)

Data Center	Operations During August 2020 State of Emergency (Engine-Hours)	Operations During September 2020 Heat Event (Engine-Hours)	Other Dates of Operations (Engine-Hours)	Sum of Non- Testing/ Non-Maintenance Operations (Engine-Hours)
1	82.7	—	—	83
2	—	—	76.6	77
3	107.8	—	—	108
4	21.6	—	—	22
5	11.0	—	—	11
6	218.8	—	—	219
7	88.2	81.2	32.5	202
8	—	—	10.3	10
9	26.0	—	—	26
10	259.7	—	141.1	401
11	75.0	—	—	75
12	275.3	—	—	275
13	—	—	85.0	85
14	19.9	—	7.6	28
15	—	—	98.0	98
16	—	—	9.6	10
17	—	—	4.0	4
18	9.0	—	9.0	18
19	24.0	—	—	24
20	88.4	14.3	—	103
Total	**1,307.4**	**95.5**	**473.7**	**1,877**

Sources: BAAQMD 2021b, Energy Commission staff analysis of data from BAAQMD

Across all events, including the extreme event days within the period, **Table B-4** shows that the average genset engine loading in BAAQMD's review was below 40 percent. However, the data does not establish a typical type of operation that could be reasonably expected to occur during any emergency or any typical operational characteristics that could be used in representative air quality modeling. For example,

some genset engines in the data set ran at no load or with very low loads; one genset engine ran at no load for 41.7 hours while the highest genset engine load in the data set was 70 percent load. The range of genset engine loads and the fact that most genset engines operated at low loads demonstrates the difficulty in predicting the level of facility electrical demands that would need to be served by the genset engines during an emergency. This also demonstrates the difficulty in making an informed prediction of the genset engines' emission rates, which vary depending on load, in the event of an emergency.

TABLE B-4 EXTREME EVENTS: NON-TESTING/NON-MAINTENANCE OPERATION (ENGINE LOADS)

Date of Event Start	Extreme Heat Wave Event?	Non-Testing/Non-Maintenance Operations - at actual load (MWh - per day)	Average Genset Engine Loading on Event Day
Unknown	—	418.0	45.3%
11/26/2019	—	1.1	13.8%
11/27/2019	—	5.5	17.7%
2/15/2020	—	0.7	7.0%
7/31/2020	—	2.9	17.3%
8/14/2020	—	39.0	48.0%
8/16/2020	—	25.6	38.4%
8/17/2020	Aug 2020 Emergency	843.1	34.5%
8/18/2020	Aug 2020 Emergency	112.0	31.2%
8/19/2020	Aug 2020 Emergency	14.4	40.0%
8/25/2020	—	5.4	30.0%
9/6/2020	Sept 2020 Event	90.0	48.6%
9/7/2020	Sept 2020 Event	16.8	39.2%
Total	—	**1,574.7**	**Average 31.6%**

Sources: BAAQMD 2021b, Energy Commission staff analysis of data from BAAQMD

Frequency of Diesel Genset Engine Emergency Use, Discussion: The BAAQMD scoping comment illustrates that genset engines were used at data centers for "non-testing/non-maintenance" purposes that could occur more frequently than utility service power outages. In staff's review of prior data center cases that were proposed within the SVP territory, staff found that the likelihood of an outage on SVP's looped 60 kV system that forces the emergency operation of a data center's gensets would be "extremely rare" and a low-probability event. For the prior cases in SVP territory, staff estimated a 1.6 percent probability of any given data center facility experiencing a power outage in a period of a year based on 10 years of data between 2009 and 2019 (e.g. CEC 2020a, CEC 2020b).

In BAAQMD's review, including the extreme events, 1,877 engine-hours of diesel genset engine use occurred at 20 data centers for "non-testing/non-maintenance" purposes (less than half of the 45 facilities included in the review, and less than a third of such facilities under BAAQMD's jurisdiction). These runtimes occurred due to power outages, in response to the heat storm, and also for other unspecified situations categorized by the genset engine operators as "emergencies." BAAQMD's review covered 288 individual diesel genset engines that operated over a 13-month record. Data was not provided concerning the number of genset engines at the 25 facilities that did not operate under these circumstances. Because the genset engines were collectively available for over 2.74 million engine-hours during the 13-month period (288 engines * 9,504 hours), and they were used for emergency operations for 1,877 engine-hours, at those facilities where operation occurred, the genset engines entered emergency operations during 0.07 percent of their available time (1,877 / 2.74 million). This confirms that emergency use of the genset engines would be very infrequent. It is important to note that this calculation only takes into consideration those genset engines that BAAQMD found to run during this time period; a more comprehensive review would also include the availability of the 25 facilities that had zero hours of genset engine run time and also conceivably the 21 facilities that were not surveyed at all. If these facilities without genset engine runs were included, the estimated probability that any given genset engine would be likely to run would be lower.

Duration of Diesel Genset Engine Emergency Use, Discussion: The BAAQMD scoping comment shows genset engines were used for "non-testing/non-maintenance" purposes, mostly due to extreme events within the 13-month record. The average runtime for each event in BAAQMD's review was approximately 5.0 hours. This shows that the duration of diesel genset engine use for "non-testing/non-maintenance" purposes, without excluding the extreme events, could involve longer runtimes than for typical utility service power outages. However, again this calculation does not factor in the larger proportion of facilities that did not run at all. In staff's review of prior data center cases, staff found an average of 2.6 hours per outage, based on only two transmission line outages that occurred in 10 years (between 2009 and 2019) affecting data centers served by SVP's 60-KV lines (e.g. CEC 2020a, CEC 2020b).

BAAQMD's review of diesel genset engine use considers a wider variety of reasons for running the genset engines than solely an electric power service outage. The listed reasons include: state of emergency load shedding, human error event, utility-inflicted disturbance, lightning strikes to transmission line, utility outage, power outage, system-wide power quality event, equipment failure, power bump, power supplier request, power blips, UPS/board repair, utility sag event, mandatory load transfer, and substation transformer power equipment failure. Many of these explanations are simply subcategories under the general category of grid reliability analyzed for prior cases. Others like a human error event, equipment failure, and UPS/board repair appear to be

exceedingly rare occurrences unlikely to significantly add to the calculation of when emergency operations might occur. Lastly, the category of emergency load shedding/power supplier request/mandatory load transfer all appear related to the heat storm and Governor-proclaimed state of emergency described above and, given the state's efforts to address reliability in response to such events, are to re-occur with such frequency. The provision of these categories and sub-categories helps to explain why BAAQMD shows more instances of genset engines running than staff found in prior cases and longer durations of runtimes during emergency situations. Although emergency operations could be triggered for a range of situations, including extreme events like those of August and September 2020, this information confirms that regardless of the triggering event, emergency operations of genset engines would be expected to be infrequent and of short duration.

Summary of Staff's Analysis of "Non-testing/Non-maintenance" Genset Engine Use: The BAAQMD's review of "non-testing/non-maintenance" genset engine operations expands our understanding of "when, why, and for how long" diesel genset engine use might occur. BAAQMD's 13-month period of review included a Governor-proclaimed state of emergency, other outages, power quality events, and human errors. Accordingly, BAAQMD's review confirms that genset engine use may occur for reasons other than grid outages, though the period is not representative of a typical year due to the rare heat storm events. Many genset engines were used for "non-testing/non-maintenance" purposes in the period reviewed by BAAQMD, but the overall number of hours of operation for the less than half of the facilities in the review that did run was 0.07 percent of the available time. Genset engine loading levels recorded during these times of use were low (average below 40 percent), and the capacity factor of these genset engines was extremely low (0.024 percent). The BAAQMD review confirms that these types of events remain infrequent, irregular, and unlikely, and the resulting emissions are not easily predictable or quantifiable. The BAAQMD review does not show that these facilities operate significantly more than staff previously analyzed in the grid reliability context in prior cases.

CPUC Decision, D.21-03-056, Directing PG&E, Southern California Edison, and San Diego Gas and Electric to Take Actions to Prepare for Potential Extreme Weather in the Summers of 2021 and 2022

On March 25, 2021, the CPUC adopted decision D.21-03-056, which directed the utilities to take specific actions to decrease peak and net peak demand and increase peak and net peak supply to avert the potential need for rotating outages that are similar to the events that occurred in summer 2020 in the summers of 2021 and 2022. On December 2, 2021, the CPUC adopted decision D.21-12-015, which is Phase 2 of the proceeding, and focuses on increasing electric supply and reducing demand for 2022 and 2023 (CPUC 2021b).

Addressed in the decisions are the following scoped issues:

- Flex Alert program authorization and design
- Modifications to and expansion of Critical Peak Pricing (CPP) Program
- The development of an ELRP
- Modifications to existing demand response (DR) programs
- Expedited IRP procurement
- Modifications to the planning reserve margin (PRM)
- Parameters for supply side capacity procurement
- Expanded electric vehicle participation

This menu of options attempts to ensure grid reliability. One of the options, ELRP, allows PG&E, Southern California Edison, San Diego Gas & Electric, and CAISO to access additional load reduction during times of high grid stress and emergencies involving inadequate market resources, with the goal of avoiding rotating outages while minimizing costs to ratepayers.

The CPUC decisions would allow data centers to choose to participate in a program whereby they could be asked to shed load if an extreme heat event similar to the August 2020 event occurs in the summer of 2022 or 2023. The initial duration of the ELRP pilot program will be five years, 2021-2025, with years 2023-2025 subject to review and revision in the Demand Response Applications proceeding that is expected to be initiated May 2022.[1] However, the CPUC decision lays out many options for emergency load reduction to ensure grid reliability that could be utilized before resorting to gensets. The decision explains that the ELRP design aspects that are subject to review and revision as part of the pilot program include minimizing the use of diesel gensets where there are safe, cost-effective, and feasible alternatives (CPUC 2021a, Section 5.2, page 19).

However, it is not expected that BDC would be operational until after the summer of 2025, based on these factors: 1) estimated construction schedule of 24 months to the initial occupancy of the building; 2) estimated completion of the CEC exemption proceeding in late 2023; 3) additional time needed for the City of Santa Clara and BAAQMD to permit the project. Thus, BDC would not be online in time to be part of the first phase of ELRP. It is less likely that these types of measures will be necessary beyond the immediate future, as longer-term strategies for grid resilience, such as battery facilities to supplement intermittent renewable generation, come online.

1 CPUC Decision 21-12-015 Attachments 1-3. Available Online at: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M428/K821/428821668.PDF

Additionally, it is unclear whether the U.S. EPA would consider participation in such a program to be an emergency use and, thus, allowed under federal permit restrictions. For these reasons staff does not consider the existence of the ELRP to have any effect on the likelihood of the Bowers Backup Generators operating outside of testing and maintenance.

Furthermore, based on the capacity factors and run times for data centers that operated during the 2020 heat events, even if it were necessary to call on data centers to shed load again, it is expected that these facilities would be called on very infrequently and would have very low capacity-factors and run times in any potential future events.

Electrical Reliability Supporting Information

The following questions were directed towards the CA3 Data Center (CA3DC) proceeding but descriptions of the overall SVP system as well as historical outage data would apply to any data centers, including the proposed BDC connecting to the SVP 60 kV system:

A. VDC Supplemental Responses to Data Requests 17-20 – CA3BGF on June 22, 2021 to staff's questions (including a table listing SVP system outages between January 1, 2009 to June 16, 2021)

17. Please explain whether the additional load associated with CA3DC would cause overloads on the SVP transmission system that would require upgrades to the existing system.

RESPONSE TO DATA REQUEST 17

SVP provided the following response.

From SVP's initial investigations, the additional load associated with CA3DC will be loadramp restricted until projects to reconfigure the Center Loop and Northwest loop and certain PG&E projects being developed to increase the transmission capacity to theSVP system are completed. To fully understand the impacts of this facility, SVP is conducting a System Impact Study funded by CA3DC and that information will be presented to CA3DC. The System Impact Study is underway. Once the System Impact Study and the SVP and PG&E projects are completed, CA3DC will be allowed to ramp based upon the approved load ramp schedule. Please see attached letter to Vantage from SVP dated 9/24/2020 for additional details related to when load will be able to be served to this facility.

VDC adds that it is proceeding in constructing and operating the CA3DC in phases as described in its SPPE Application pursuant to the 9/24/2020 letter (attached). The SPPEApplication has been prepared to accommodate the future load growth and electricity availability but presents the "whole of the action" as required by CEQA for full planned buildout of the CA3DC facility.

18. Please provide for the 60 kV loop on the SVP system that would serve the CA3DC:
    a. A physical description
    b. The interconnection points to SVP service
    c. The breakers and isolation devices and use protocols
    d. A list of other connected loads and type of customers
    e. A written description of the redundant features that allow the system to provide continuous service during maintenance and fault conditions

RESPONSE TO DATA REQUEST 18

The following response was provided by SVP.

a. The loop serving CA3DC is an overhead transmission line comprised of mainly wooden transmission poles, bundled 954 AAC Conductor, serving the Central Clara Area.
b. Interconnection with the SVP system would be in the 60KV Junction Feeder that serves the customer's transformer.
c. SVP utilizes a breaker and half bus design primarily to isolate any faults within each breakers zone of protection, isolating a fault to the specific location and preventing an extended outage to adjacent transformers within the substation or to an adjacent substation.
d. Center Loop serves a mix of General Distribution substations and customer dedicated 60kV Junctions for a total of six substations.
e. Loop services are designed to have two sources of power so that in the event of an unplanned outage, the faulted zone is isolated from the remainder of the loop system, isolating the unplanned outage to the affected zone. In the same manner, a planned outage used to perform maintenance on a section of the transmission line can be performed without having to drop load, by planning the isolation locations around the piece of equipment to be maintained.

19. Please describe any outages or service interruptions on the 60 kV systems that would serve the CA3DC:
    a. How many 60 kV lines serve data centers in SVP, and how many data centers are on each?
    b. What is the frequency of these outages and how would they require the use of backup generators?
    c. How long were outages and what were their causes?
    d. Are there breakers on the 60 kV line or disconnect switch(es) and did they

isolate the faults?

e. What was the response to the outage(s) by the existing data centers (i.e., initiated operation of some or all back up generation equipment, data offshoring, data center planned shutdown, etc.)?

RESPONSE TO DATA REQUEST 19

The following responses were provided by SVP.

a. SVP currently has five 60 kV loops plus an internal 60 kV loop at the Scott Receiving Station (SRS) and the Kifer Receiving Station (KRS). The number of Data Centers (DC) on each Loop:

   i. North East Loop—4 DC

   ii. North West Loop—5 DC

   iii. East Loop—8 DC

   iv. Center Loop--18 DC

   v. South Loop—5 DC

   vi. SRS Internal Loop – 2 DC

   vii. KRS Internal Loop – 4 DC

b&c. There were four outages between January 1st, 2009 and June 16, 2021 where SVP lost both 60kV feeds into a substation that affected a data center where back-up generators were required to operate. Over this period, this equates to a system reliability of 99.98%.

The outages occurred on May 28th, 2016 (7 hours 23 minutes), December 2nd, 2016 (12 minutes) and two different outages on August 16th, 2020 (one 2 hours 21 minutes and second 10 hours 22 minutes). This is a total outage time affecting data centers of 20 hours and 18 minutes. Only the data centers at various locations on the associated loops were affected, not all data centers.

Since 2009, 60kV outage data is presented in the below table (over 12 years, 5 months of data). The items highlighted in yellow indicate that there was some kind of fault occurred. The items highlighted in blue is when we had a customer out of power as a result. The non-highlighted items are where an outage was taken to correct an observed situation.

d. Each loop has breaker/switches and they operated as expected.

e. SVP does not have knowledge of how each data center reacts to an SVP-caused outage. SVP only know the times we restored service.

20. Please provide the following regarding PSPS events:

    a. Would historical PSPS events have resulted in the emergency operationsof the backup generators at the proposed CA3DC?

    b. Have there been changes to the SVP and PG&E system around the CA3DC that would affect the likelihood that future PSPS events would result in the operation of emergency generators at the proposed CA3DC?

RESPONSE TO DATA REQUEST 20

SVP provided the following responses.

a. To date, SVP has not had any historical PSPS events. As such there has been no impact to SVP or SVP customers by a PG&E initiated PSPS event in other areas.

b. SVP has not been notified of any changes related to PG&E's transmission system that would change the likelihood of future PSPS events.

DATE	LINE (S)	CAUSE	DURATION	CUSTOMERS OUT OF POWER
01/29/21	HOM-BRO	Tree Trimming	1 Hour 38 Min	0
12/29/20	ZEN-URA	Tree Trimming	1 Hour 25 Min	0
09/26/20	HOM-BRO	Tree Trimming	2 Hours 55 Min	0
09/22/20	NAJ-PLM	Tree Trimming	1 Hour 36 Min	0
08/16/20	KRS 60KV BUS AND LAF SUB	Multiple lightning strikes	2 hours 21 Min	1273
08/16/20	WAL-FIB, WAL-URA	Multiple lightning strikes	10 Hours 22 Min	5438
10/24/19	MIS CB62 (NRS-MIS)	Hot spot repair	29 Min	0
10/11/19	WAL-FIB	Balloons close to line	6 Min	0
09/17/16	KRS-PLM	Rotten pole replacement	10 Hours 5 Min	0
08/14/19	SRS CB982-(SRS-CEN)	Faulty JMUX Card	4 Min	0
03/30/19	URA-WAL	Bird @ UW43	1 Hour 46 Min	0
11/22/18	HOM-SER	Pole Fire HS9 (force out)	1 Hour 27 Min	0
07/5/18	SER-HOM	Force out to remove balloons	9 Min	0
05/5/18	SER-HOM	Force out to remove balloons	11 Min	0
09/1/17	AGN-NAJ	Force out to cut trees	1 hour 5 min	0
08/8/17	URA-ZEN	Force out to remove balloons	20 Min	0
05/25/17	SRS-FRV	Tripped during SCADA commissioning	1 Min	0
05/8/17	NWN-ZEN	Force out to remove bird	50 Min	0

DATE	LINE (S)	CAUSE	DURATION	CUSTOMERS OUT OF POWER
04/29/17	SRS-HOM	Force out to remove balloons	2 Hours 22 Min	0
03/20/17	JUL-CEN	Third Party got into 60kV	9 Hours 55 Min	0
01/22/17	SER-BRO	Tree in wires	3 Hours 31 Min	0
01/22/17	NAJ-PLM	A phase contact guy wire when winds pick up	1 Hour 47 Min	0
01/19/17	KRS-PLM	Palm frond between phases	41 Min	0
01/18/17	NAJ-PLM	A phase contact guy wire when winds pick up	1 Hour 44 min	0
12/02/16	RAY T1 & T2	Dropped both transformers during restoration switching due to relay not reset	12 Min	257
09/06/16	SRS-CEN	Bird Contact	40 Min	0
06/30/16	WAL-FIB	Bird nest contact	12 Hours 4 Min	0
05/28/16	SRS-FRV- NWN-ZEN	Balloons in line and breaker fail	7 Hours 23 Min	28
02/17/16	SRS-FRV	Palm tree with fire	7 Hours	0
11/18/15	SER-BRO	Arcing wires forced	2 Hours 59 Min	0
11/16/15	SER-BRO	Rotten pole- forced	22 Hours 32 Min	0
11/09/15	JUL CB32	Possible lightning	53 min	0
10/29/15	SER-BRO	Roller arcing-forced	3 Hours 33 Min	0
08/12/15	BRO-DCJ, BRO T1	Squirrel on CB100	3 Hours 55 Min	2155
06/24/15	CCA CB22	Bad JMUX card	3 Hours 23 Min	0
05/30/15	SER-BRO	No cause found	3 Hours 12 Min	0
03/31/15	BRO-DCJ 12KV BUS 1 & 2	Squirrel across 12kv bus tie	3 Hours 26 Min	2927
01/28/15	Mission CB12	Shorted control cable	6 Hours 29 Min	0
04/24/14	DCJ CB42	Tripped during relay work. BF wired as TT	1 Hour 30 Min	0
10/14/13	URA_WAL	Sheared Hydrant hit 60kV above	2 Hours 26 Min	0
12/06/12	Jul CB 32	Tripped due to cabinet vibration	2 Min	0

SILICON VALLEY POWER.
CITY OF SANTA CLARA

September 24, 2020

Vantage Data Centers
Sam Huckaby, Vice President – Construction
2820 Northwestern Parkway
Santa Clara, CA 95051

Subject: New Data Center at 2590 Walsh

Dear Mr. Huckaby,

The City of Santa Clara's Electric Department, Silicon Valley Power, is the electric utility for the City of Santa Clara. Electric service to the subject project will be provided in accordance with the Rules and Regulations for the utility as approved by the Santa Clara City Council. Silicon Valley Power has reviewed the power needs and commitments at all Vantage sites within the City per the property list below:

- 2820 Northwestern
- 2897 Northwestern
- 737 Mathew
- 2590 Walsh (new proposed project not yet approved – request for 90 MVA)

Based on Vantage's existing and future power needs, Silicon Valley Power should be able to provide the following total power combined for all the sites:

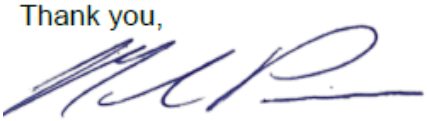
- Up to 126.5 MVA from the current date to the end of Second Quarter of 2022
- Up to 192.5 MVA at Third Quarter of 2022 upon completion of the South Loop Project.
    - If there are delays on the South Loop Project, it will affect the timeline to increase from 126.5 to 192.5.
    - 737 Mathew is limited to 33 MW until the South Loop Project is completed.
- Silicon Valley Power is starting the process for additional transmission capacity to the City. The conceptual timeline for completion is Fourth Quarter of 2025. Upon completion of additional transmission, Vantage can increase from 192.5 MVA to 273 MVA.
- If Vantage has a need to exceed 192.5 MVA prior to these timeframes, the City would be interested in partnering on a battery storage project or other generation facility to serve those needs.

The specific details of this service and SVP system modifications required to provide this capacity for 2590 Walsh will be worked out in a Substation Service Agreement at a future date. The City is also in the process of reviewing and updating its load development fee, which will be applicable for any new project (or above 192.5 MVA). It is also important to note that all appropriate fees will need to be paid, and this letter does not supersede any requirements or

agreements for the already approved sites at 2820 Northwestern, 2897 Northwestern, and 737 Mathew.

Questions can be directed to Wendy Stone at (408) 615-5648.

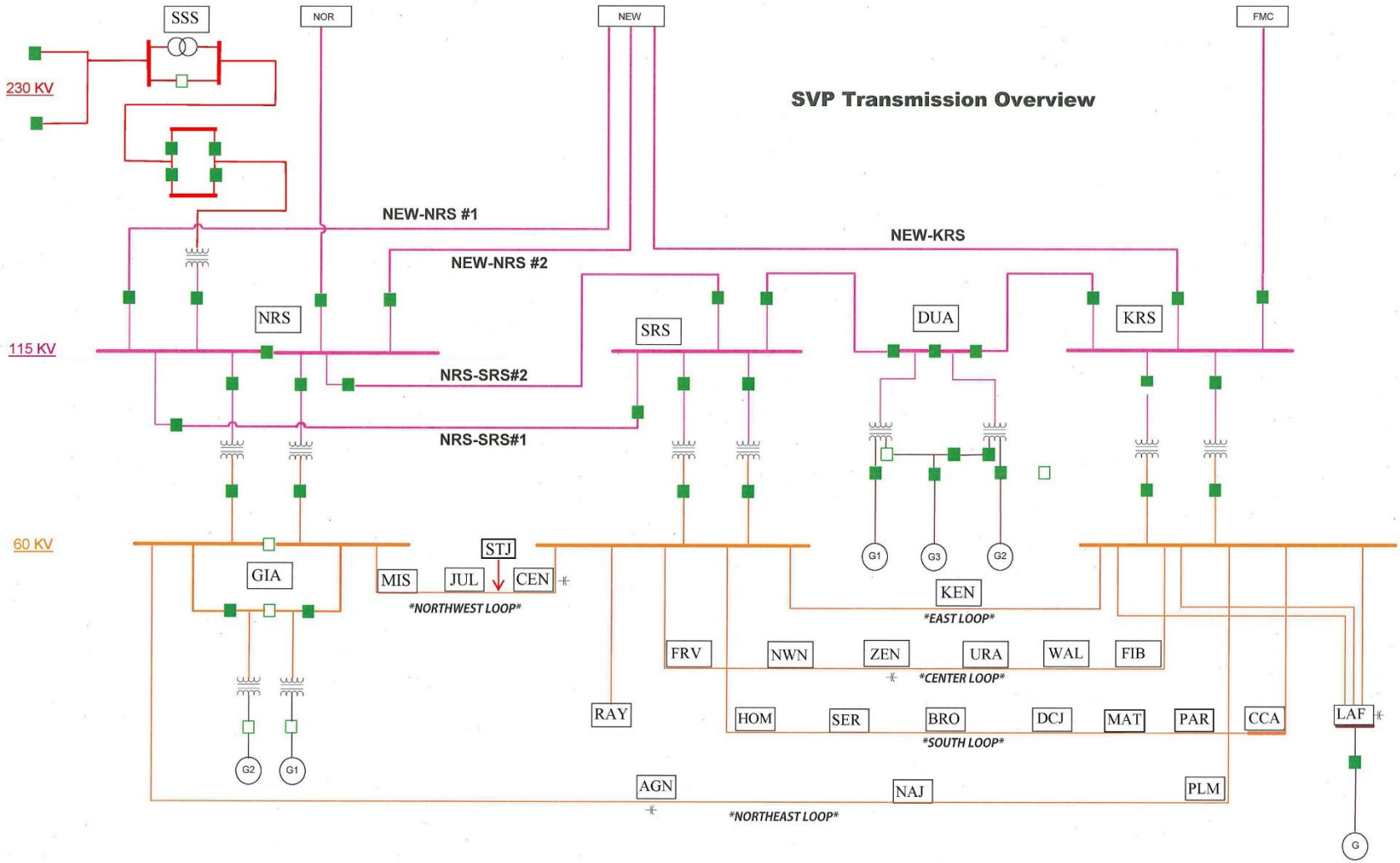
Thank you,

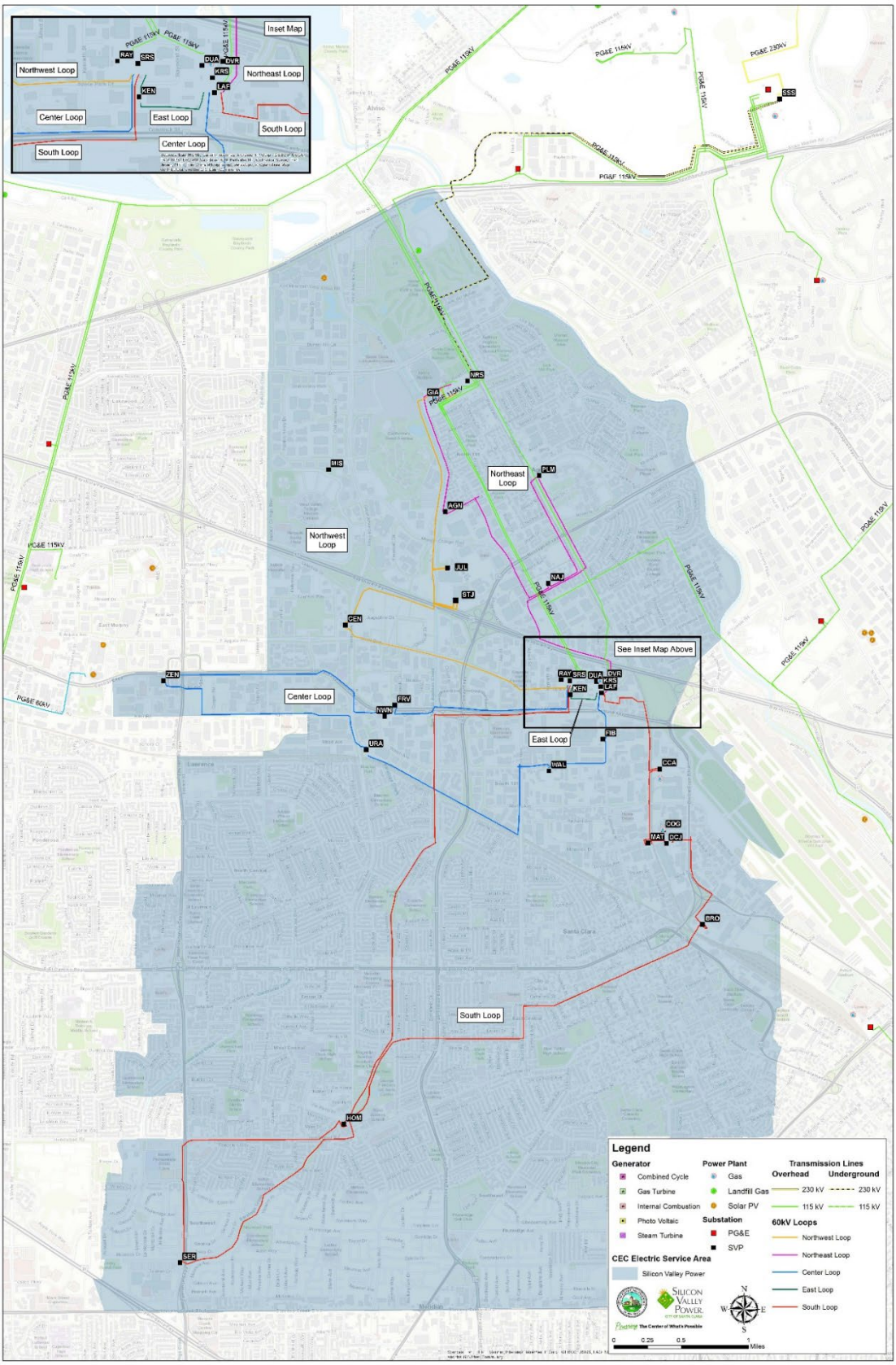


Manuel Pineda
Chief Electric Utility Officer
City of Santa Clara – Silicon Valley Power

cc: Michael Stoner

B. Schematic diagram of the SVP 230 kV, 115 kV and 60 kV transmission system, and SVP System Map




Inset Map
Northwest Loop
Northeast Loop
Center Loop
East Loop
South Loop
Center Loop
South Loop
RAY
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DUA
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KEN
LAF
BSS
PG&E 115kV
PG&E 230kV
GIA
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PLM
Northeast Loop
AGN
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JUL
NAJ
STJ
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URA
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CCA
COC
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Legend
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Combined Cycle
Gas Turbine
Internal Combustion
Photo Voltaic
Steam Turbine
Power Plant
Gas
Landfill Gas
Solar PV
Substation
PG&E
SVP
CEC Electric Service Area
Silicon Valley Power
Transmission Lines
Overhead
Underground
230 kV
115 kV
60kV Loops
Northwest Loop
Northeast Loop
Center Loop
East Loop
South Loop
Silicon Valley Power
Powering The Center of What's Possible
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Miles

C. A list of the customers connected to each of the five 60 kV loops in the SVP system

SVP Loop Customers and Loading Peak - Substation

Substation	Loop	Customer/Industry	Substation	Loop	Customer/Industry
Fairview	Center	Mfg1	Central	Northwest	Medical2
Fairview	Center	Datacenter1	Central	Northwest	Real Estate2
Fairview	Center	Datacenter2	Central	Northwest	Real Estate3
Fairview	Center	Datacenter3	Central	Northwest	Real Estate4
Fairview	Center	Datacenter4	Central	Northwest	Datacenter24
FIB	Center	Mfg2	Central	Northwest	Datacenter25
Lafayette	Center	Mfg3	Central	Northwest	R&D2
Lafayette	Center	Datacenter5	Central	Northwest	Real Estate5
Lafayette	Center	Mfg4	Central	Northwest	Real Estate6
Lafayette	Center	Mfg5	Central	Northwest	Healthcare equipment
Lafayette	Center	Datacenter6	Central	Northwest	Education13
Lafayette	Center	Mfg6	Central	Northwest	Semiconductor/R&D
NWN	Center	Datacenter7	JUL	Northwest	Datacenter26
Uranium	Center	Datacenter8	Mission	Northwest	Property Management7
Uranium	Center	R&D1	Mission	Northwest	Computer hardware/software 2
Uranium	Center	Property Management1	Mission	Northwest	Real Estate7
Uranium	Center	Datacenter9	Mission	Northwest	Datacenter27
Uranium	Center	Datacenter10	Mission	Northwest	Software1
Uranium	Center	Datacenter11	Mission	Northwest	Computer hardware/software 3
Uranium	Center	Property Management2	Mission	Northwest	Cyber Security 2
Uranium	Center	Education1	Mission	Northwest	Conventions 2
Uranium	Center	Education2	Mission	Northwest	Hotel3
Uranium	Center	Education3	Mission	Northwest	Medical3
Uranium	Center	Education4	Mission	Northwest	Cyber Security 3
Uranium	Center	Semiconductor/ Telecommunications	Mission	Northwest	Education14
Uranium	Center	Gaming/AI/ Semiconductors1	Mission	Northwest	Datacenter28
Uranium	Center	R&D/Mfg	Mission	Northwest	R&D3
Uranium	Center	Mfg7	Mission	Northwest	Semiconductor6
Walsh	Center	Semiconductor1	Mission	Northwest	Storage1
Walsh	Center	Gaming/AI/ Semiconductors2	Mission	Northwest	Entertainment3
Walsh	Center	Mfg8	Mission	Northwest	Property Management8
Walsh	Center	Gaming/AI/ Semiconductors3	Mission	Northwest	Medical4
Walsh	Center	Datacenter12	Mission	Northwest	Telecommunications2
Walsh	Center	Education5	Mission	Northwest	NFL5
Walsh	Center	Government1	Raymond	Northwest	Datacenter29
Walsh	Center	Government2	Raymond	Northwest	Datacenter30
Walsh	Center	Semiconductor2	Raymond	Northwest	Datacenter31
Walsh	Center	Semiconductor/R&D/Mfg	Raymond	Northwest	Datacenter32
Walsh	Center	Mfg9	Raymond	Northwest	Telecommunications3
Walsh	Center	Telecommunications1	Raymond	Northwest	Datacenter33
Walsh	Center	Datacenter13	Raymond	Northwest	Gaming/AI/Semiconductors5

SVP Loop Customers and Loading Peak - Substation

Substation	Loop	Customer/Industry	Substation	Loop	Customer/Industry
Walsh	Center	Education6	Raymond	Northwest	Datacenter34
Walsh	Center	Datacenter14	Brokaw	South	Government3
Zeno	Center	Education7	Brokaw	South	Education15
Zeno	Center	Education8	Brokaw	South	Education16
Zeno	Center	Semiconductor3	Brokaw	South	Education17
Zeno	Center	Datacenter15	Brokaw	South	Real Estate8
Zeno	Center	Bio Tech 1	Brokaw	South	Design1
Zeno	Center	Semiconductor/ Telecommunications	Brokaw	South	Security 2
Zeno	Center	Semiconductor/R&D/Mfg	Brokaw	South	Education18
Agnew	Northeast	Security1	Brokaw	South	Education19
Agnew	Northeast	Property Management3	CCA	South	Mfg12
Agnew	Northeast	Property Management4	DCJ	South	Datacenter35
Agnew	Northeast	Entertainment1	Homestead	South	Education20
Agnew	Northeast	NFL1	Homestead	South	Education21
Agnew	Northeast	Property Management5	Homestead	South	Education22
Agnew	Northeast	Entertainment2	Homestead	South	Education23
Agnew	Northeast	Hotel1	Homestead	South	Education24
Agnew	Northeast	Datacenter18	Homestead	South	Education25
Agnew	Northeast	Medical1	Homestead	South	Education26
Agnew	Northeast	Mfg10	Homestead	South	Healthcare1
Agnew	Northeast	Datacenter19	Homestead	South	Telecommunications4
Agnew	Northeast	Datacenter20	Homestead	South	Education27
Agnew	Northeast	Datacenter21	Homestead	South	Education28
Agnew	Northeast	Datacenter22	MAT	South	Datacenter36
Agnew	Northeast	Cyber Security 1	PRK	South	Datacenter37
Agnew	Northeast	Hotel2	Serra	South	Medical device
Agnew	Northeast	Property Management6	Serra	South	Education29
NAJ	Northeast	Mfg11	Serra	South	Education30
Palm	Northeast	Datacenter/software/ cloud computing	Serra	South	Healthcare2
Palm	Northeast	NFL2	Serra	South	Healthcare3
Palm	Northeast	NFL3	Serra	South	Healthcare4
Palm	Northeast	NFL4	Serra	South	Healthcare5
Palm	Northeast	Education9	Kenneth	East	Datacenter16
Palm	Northeast	Education10	Kenneth	East	Datacenter17
Palm	Northeast	Conventions 1	Kenneth	East	Gaming/AI/Semiconductors4
Palm	Northeast	Education11			
Palm	Northeast	Semiconductor4			
Palm	Northeast	Datacenter23			
Palm	Northeast	Education12			
Palm	Northeast	Real Estate1			
Palm	Northeast	Network hardware1			
Palm	Northeast	Semiconductor5			
Palm	Northeast	Computer hardware/software 1			

SVP Loop Customers and Loading Peak - Loop

Center 141MW	East Loop 15MW	Northeast Loop 28MW	Northwest Loop 112MW	South Loop 65MW
Mfg1	Datacenter16	Security1	Medical2	Government3
Datacenter1	Datacenter17	Property Management3	Real Estate2	Education15
Datacenter2	Gaming/AI/ Semiconductors4	Property Management4	Real Estate3	Education16
Datacenter3		Entertainment1	Real Estate4	Education17
Datacenter4		NFL1	Datacenter24	Real Estate8
Mfg2		Property Management5	Datacenter25	Design1
Mfg3		Entertainment2	R&D2	Security 2
Datacenter5		Hotel1	Real Estate5	Education18
Mfg4		Datacenter18	Real Estate6	Education19
Mfg5		Medical1	Healthcare equipment	Mfg12
Datacenter6		Mfg10	Education13	Datacenter35
Mfg6		Datacenter19	Semiconductor/R&D	Education20
Datacenter7		Datacenter20	Datacenter26	Education21
Datacenter8		Datacenter21	Property Management7	Education22
R&D1		Datacenter22	Computer hardware/software 2	Education23
Property Management1		Cyber Security 1	Real Estate7	Education24
Datacenter9		Hotel2	Datacenter27	Education25
Datacenter10		Property Management6	Software1	Education26
Datacenter11		Mfg11	Computer hardware/software 3	Healthcare1
Property Management2		Datacenter/software/cloud computing	Cyber Security 2	Telecommunications 4
Education1		NFL2	Conventions 2	Education27
Education2		NFL3	Hotel3	Education28
Education3		NFL4	Medical3	Datacenter36
Education4		Education9	Cyber Security 3	Datacenter37
Semiconductor/ Telecommunications		Education10	Education14	Medical device
Gaming/AI/Semiconductors1		Conventions 1	Datacenter28	Education29
R&D/Mfg		Education11	R&D3	Education30
Mfg7		Semiconductor4	Semiconductor6	Healthcare2
Semiconductor1		Datacenter23	Storage1	Healthcare3
Gaming/AI/Semiconductors2		Education12	Entertainment3	Healthcare4
Mfg8		Real Estate1	Property Management8	Healthcare5
Gaming/AI/Semiconductors3		Network hardware1	Medical4	

Center 141MW	East Loop 15MW	Northeast Loop 28MW	Northwest Loop 112MW	South Loop 65MW
Datacenter12		Semiconductor5	Telecommunications2	
Education5		Computer	NFL5	
Government1			Datacenter29	
Government2			Datacenter30	
Semiconductor2			Datacenter31	
Semiconductor/R&D/Mfg			Datacenter32	
Mfg9			Telecommunications3	
Telecommunications1			Datacenter33	
Datacenter13			Gaming/AI/Semiconductors5	
Education6			Datacenter34	
Datacenter14				
Education7				
Education8				
Semiconductor3				
Datacenter15				
Bio Tech 1				
Semiconductor/ Telecommunications				
Semiconductor/R&D/Mfg				

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Appendix C

Biological Resources Site Visit Report

Appendix C: Biological Resources Site Visit Report

Purpose of Site Visit

GI Partners proposes to develop the Bowers Backup Generating Facility (BBGF) at 2805 Bowers Avenue, Santa Clara, California. The BBGF would be an emergency backup generating facility with a generation capacity of up to 72 megawatts (MW) to provide an uninterrupted power supply for its tenant's servers at the Bowers Data Center (BDC) which together constitute the "project".

The purpose of this site visit was to identify if sensitive natural resources occurred at or near the site and to determine habitat suitability for special-status plants and wildlife that may have the potential to occur at or near the proposed project site. The project site is located at the eastern side of Bowers Avenue, south of Walsh Avenue and north of the Union Pacific Railroad in Santa Clara, California. The project site encompasses approximately 5.12 acres. The Santa Clara County Assessor's Parcel Number (APN) is 216-28-063 and the site occurs on the San Jose West U.S. Geological Survey (USGS) topographic map quadrangle (quad map). The project site is developed and consists of an existing building, driveway, and parking lot. Vegetation consists of commercial landscaping and a mix of native and non-native trees. Cathy Conner, RPA FMA and Real Estate Manager with Coldwell Banker Richard Ellis (CBRE) Group Inc., was met on-site prior to the start of the site visit. No meetings were scheduled with applicant representatives.

Staff/Consultant Observations

Methods

Leane Dunn, MF, Senior Biologist with Aspen Environmental Group, conducted a biological site visit of the project site on December 23, 2022, to document existing site conditions. Prior to the site visit and during the preparation of this report, staff reviewed the following databases listed below for nearby occurrences of species and habitat in the project area:

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) RareFind 6 Data (Nine Quad Summary Table) and Biogeographic Information and Observation System (BIOS) Viewer (Map) (https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) federal resource list (https://ipac.ecosphere.fws.gov/)
- USFWS National Wetlands Inventory (NWI) Wetlands Mapper (https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper)
- California Native Plant Society (CNPS) Rare Plant Inventory species list (https://rareplants.cnps.org/)

- California Academy of Sciences and National Geographic Society - iNaturalist (https://www.inaturalist.org/)
- The Cornell Lap of Ornithology eBird (https://ebird.org/home)
- USGS National Geologic Map Database topoView (https://ngmdb.usgs.gov/topoview/)
- Google Earth® aerial photographs (https://earth.google.com/web/)

Records searches of the CNDDB and CNPS species lists consisted of the San Jose West quad and eight surrounding quads. The evaluation of the potential for special status species or sensitive natural resources to be present at the site is provided in **Attachment A**.

The site visit began at 9:53 AM and ended at 12:32 PM. Weather was sunny and clear with a constant temperature of 71 degrees Fahrenheit (˚F) and a wind speed between 0 and 1.5 miles per hour (mph). The site visit began at the southern part of the project and continued counterclockwise around the existing building. The site visit consisted of surveying the exterior building and surrounding property (i.e., the inside of the building was not accessed). Tree species, their location, and condition were reviewed against the Certified Arborist Report (GI Partners 2022a). Plants and wildlife species were identified.

Results

Vegetation Communities: The site consists of an existing building and building amenities (such as garbage bins, electrical units, etc.), a driveway, parking lot, picnic tables and grass area, basketball hoop, landscaping, and urban trees. The site does not contain any natural community vegetation alliances as described in A Manual of California Vegetation (Sawyer et al., 2009) or listed on the CDFW California Natural Community List (CDFW 2022a). A list of species observed during the site visit is provided in **Attachment A**.

Wetlands and Waters: Wetlands or waters were not observed on the site. The USFWS NWI Wetlands Mapper and CNDDB/BIOS results indicate the presence of a creek (labeled Saratoga Creek on the BIOS map) that traverses the site from north to south along the eastern side of the existing building. However, no evidence of a creek or riparian area was observed within the project limits.

A review of current and past USGS topographic maps for the project site was reviewed for the presence of Saratoga Creek. Historically it appears that the 2018 San Jose West topographic map shows a blue line intermittent Saratoga Creek within the project site, connecting to San Tomas Aquinas Creek to the south. The most current 2021 Milpitas and San Jose West topographic map show Saratoga Creek originating from Guadalupe Slough to the north, flowing into San Tomas Aquinas Creek, and back into Saratoga Creek, approximately 0.40 miles east of the project site. The 2021 San Jose West topographic map does not show a creek at the project site.

Special Status Plants: No special-status plant species were observed at the site. The project area is highly developed and does not provide suitable habitat for special status plant species.

Special Status Wildlife Species: Native bird species were observed at the site. No other special-status wildlife species were observed. Introduced wildlife was observed at the site. The site may provide habitat for roosting bats.

An occurrence of American peregrine falcon (*Falco peregrinus anatum*) is within the San Jose West quad. The record is considered sensitive, and the exact location is suppressed by the CDFW. Habitat for the record is described as a high-rise office building. The record further states that the Santa Cruz Predatory Bird Research Group built a nest box in 2006 and started a nest webcam in 2007. The record was last updated in 2016, and as of 2015, the site has been occupied since 2006. The Santa Cruz Predatory Bird Research Group website (https://pbrg.pbsci.ucsc.edu/) states they manage two live streaming Peregrine Falcon nest cams in partnership with PG&E in San Francisco and San Jose City Hall in San Jose. San Jose City Hall is located on the San Jose West Quad, approximately 5.5 miles southeast of the project site.

The site provides marginal foraging habitat for Cooper's hawk (*Accipiter cooperii*) and there are multiple observations recorded within five miles of the project site. This species typically nests in second-growth conifer stands, riparian vegetation, and usually near streams (CWHR 2023). They are often seen in parks, quiet neighborhoods, over fields, at backyard feeders, and along busy streets with trees (AAB 2023). Nesting at the site by Cooper's hawk is not anticipated due to the lack of dense forests or nearby streams.

There are numerous nearby records for burrowing owl *(Athene cunicularia)* surrounding the project site. Burrowing owls typically nest in old burrows of ground squirrels or other mammals. They are also known to use pipes, culverts, and nest boxes (CWHR 2023). Though primarily a grassland species, it persists and even thrives in landscapes highly altered by human activity. Burrows for roosting and nesting, and relatively short vegetation with sparse shrubs and taller vegetation, is the overriding characteristic of suitable habitat (Shuford & Gardali 2008). The site does not provide suitable nesting habitat for this species. No ground squirrel or other mammal burrows were observed at the project site. Urban habitat, such as pipes, culverts and nest boxes that could also be used by burrowing owls, were not observed at the site. The potential for mammal burrows to be created at the site in the future is low.

Purple martin (*Progne subis*) has been observed two miles away in open barren areas at San Jose International Airport. Concentrations of nesting cavities is a common characteristic of all nesting areas, as well as relatively open-air space above accessible nest sites, and an abundance of aerial insect prey. A wide variety of nesting habitat substrates are used, such as tree cavities, bridges, utility poles, lava tubes and buildings (Shuford & Gardali 2008). The site does not support a high concentration of nesting

cavities but does support some cavities and nesting opportunities on the buildings, and potential foraging habitat. The likelihood of this species nesting at the project site is low.

The site provides habitat for nesting birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Nests were observed in several trees within the parking lot. Bird activity was observed throughout the site and was especially high in the red ironbark eucalyptus trees. Birds can also nest in bushes and shrubs located throughout the project site or on the existing building. Bird deterrents spikes were observed at the main entrance to the building but were not observed elsewhere. The site provides moderate habitat for roosting bats. Bats could roost on the existing building, within the Spanish-tile roof crevices, or within cavities found in olive trees. Staining was observed on the overhanging eaves underneath the roof tiles. It is unknown whether this is a result of urban water runoff or roosting bats. Small cavities within olive trees #34, #36 and #40 could provide moderate habitat for roosting bats. Cavities or crevices were not observed within any other trees at the project site. Townsend's big-eared bat (*Corynorhinus townsendii*) is known to use human-made structures for roosting, including buildings, but are extremely sensitive to disturbance of roosting sites (CWHR 2023). Townsend's big-eared bat has a low potential to occur at the project site given the level of human activity. Other bat species have the potential to occur at the site.

Photographs

The following photographs document the site's conditions.

Photograph 1: Facing northwest from the southeastern corner of the Project Site

View of parking lot, medians, and urban trees. Inactive bird nests were observed in several trees in this area. The existing building is in the background. IMG_2498.JPEG, taken by Leane Dunn, December 23, 2022.

Photograph 2: Facing north-northeast from the western side of the Project Site

View of parking lot, existing building, landscape area, and urban trees near the entrance to the building. IMG_2581.JPEG, taken by Leane Dunn, December 23, 2022.

Photograph 3: Facing north-northwest from the eastern side of the Project Site

View of parking lot, existing building, and landscape area on the eastern side of the site. IMG_2532.JPEG, taken by Leane Dunn, December 23, 2022.

Photograph 4: Facing north from the eastern side of the Project Site

View of picnic tables and grassy area on the eastern edge of the site. IMG_2599.JPEG, taken by Leane Dunn, December 23, 2022.

Photograph 5: Facing west from the eastern side of the Project Site

View of parking lot, existing building, landscape area and urban trees on the eastern side of the site. IMG_2555.JPEG, taken by Leane Dunn, December 23, 2022.

Photograph 6: Facing northwest from the western side of the Project Site

View of parking lot adjacent to Bowers Avenue. Some olive trees have small cavities that may provide moderate habitat for roosting bats. IMG_2575JPEG, taken by Leane Dunn, December 23, 2022.

Photograph 7: Facing south from the northern side of the Proposed Site

View of staining underneath Spanish tile roofing. The tile roofing could provide habitat for roosting bats. IMG_2616.JPEG, taken by Leane Dunn, December 23, 2022.

Conclusions

Based on the observations during the site visit, the conditions at the project site are as described in the applicant's arborist report and application. The project site supports an existing structure, parking lots, landscaped areas, and urban trees. There is no evidence of a creek or other jurisdictional features at the site, however water from the area flows into adjacent storm drains. The site provides low to moderate habitat for American peregrine falcon, Cooper's hawk, and purple martin. Burrowing owl is not expected to occur. The site provides potential habitat for nesting birds protected under the MBTA and California Fish and Game Code. The site provides moderate potential to support for roosting bats. No other special status species or sensitive natural resources were observed at the site. The site does not provide habitat for other special status species.

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Attachment A – Species Observed List

Common Name	Scientific Name	Native (N)/ Introduced (I)
Wildlife Species		
Anna's hummingbird	*Calypte anna*	N
American crow	*Corvus brachyrhynchos*	N
House finch	*Haemorhous mexicanus*	N
California towhee	*Melozone crissalis*	N
Black phoebe	*Sayornis nigricans*	N
Eastern gray squirrel	*Sciurus carolinensis*	I
Lesser goldfinch	*Spinus psaltria*	N
*Plant Species**		
Acmadenia	*Acmadenia* sp.	I
Blue lily	*Agapanthus praecox*	I
Common box	*Buxus sempervirens*	I
Bottlebrush	*Callistemon* sp.	I
Carob tree	*Ceratonia siliqua*	I
Cyclamen	*Cyclamen* sp.	I
English ivy	*Hedera helix*	I
Creeping lantana	*Lantana montevidensis*	I
Common lavender	*Lavandula angustifolia*	I
Wax-leaf ligustrum	*Ligustrum japonicum*	I
Myrtle	*Myrtus communis*	I
Oleander	*Nerium oleander*	I
New Zealand flax	*Phormium tenax*	I
Red tip photinia	*Photinia x fraseri*	I
Japanese cheesewood	*Pittosporum tobira*	I
Indian hawthorn	*Rhaphiolepis indica*	I
Asiatic jasmine	*Trachelospermum asiaticum*	I
Ornamental grasses	unknown	I

Note: * Does not include tree species identified in the Certified Arborist Report

Attachment B – Special Status Species Occurrence Potential in the Project

Each of these species was assessed for potential to occur within the Study Area based on the following criteria:

- **Present:** Species (or sign) was observed in the Study Area during recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Habitat (including soils) for the species occurs in the Study Area and a known occurrence occurs within 5 miles within the past 20 years; however, the species was not detected during recent surveys.
- **Moderate:** Habitat (including soils) for the species occurs in the Study Area and a known regional record has been documented, but not within 5 miles of the Project site or within the past 20 years; or there is a documented occurrence within 5 miles of the Study Area within the past 20 years and marginal or limited habitat occurs on site; or the species' range includes the geographic area and suitable habitat exists in the Study Area.
- **Low:** Limited habitat for the species occurs in the Study Area and the species' range includes the geographic area, but there are no documented occurrences within 5 miles of the Study Area within the past 20 years.
- **Not Likely to Occur:** Species or signs not observed in the Study Area, the Study Area is outside of the species' known range, and conditions in the Study Area are not suitable for occurrence.

Habitat conditions include soil type, vegetation, and other factors relevant to each species. The criteria are general guidelines and a species' potential for occurrence may be modified based on biological analysis of habitat quality, isolation, and other factors. In this context, species refers to a taxonomic entity and can include recognized subspecies, population segments, or other genetically or geographically distinct units.

Special-Status Species Occurrence Potential in the Project Vicinity

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Plants			
Alkali milk-vetch *Astragalus tener* var. *tener*	1B.2	Annual herb. Alkali playa, valley and foothill grassland, and vernal pools.	**Not Likely to Occur** The project area is developed/disturbed. No suitable habitat to support this species.
Arcuate bush-mallow *Malacothamnus arcuatus*	1B.2	Perennial deciduous shrub. Chaparral and cismontane woodland.	**Not Likely to Occur** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Species	**Status**	**Lifeform and Habitat**	**Occurrence in Study Area**
Ben Lomond spineflower *Chorizanthe pungens var. hartwegiana*	1B.1	Annual herb. Lower montane coniferous forest.	**Not Likely to Occur** The project area is developed/disturbed. No suitable habitat to support this species.
Bent-flowered fiddleneck *Amsinckia lunaris*	1B.2	Annual herb. Coastal bluff scrub, cismontane woodland, and valley and foothill grassland.	**Not Likely to Occur** The project area is developed/disturbed. No suitable habitat to support this species.
Big-scale balsamroot *Balsamorhiza macrolepis*	1B.2	Perennial herb. Chaparral, cismontane woodland, and valley and foothill grassland.	**Not Likely to Occur** The project area is developed/disturbed. No suitable habitat to support this species.
Bonny doon manzanita *Arctostaphylos silvicola*	1B.2	Perennial evergreen shrub. Closed-cone coniferous forest, chaparral, and lower montane coniferous forest.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Brittlescale *Atriplex depressa*	1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
California alkali grass *Puccinellia simplex*	1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
California seablite *Suaeda californica*	1B.1 FE	Perennial evergreen shrub. Marshes and swamps (coastal salt).	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Chaparral harebell *Campanula exigua*	1B.2	Annual herb. Chaparral (rocky, usually serpentinite).	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Chaparral ragwort *Senecio aphanactis*	2B.2	Annual herb. Chaparral, cismontane woodland, and coastal scrub.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Species	**Status**	**Lifeform and Habitat**	**Occurrence in Study Area**
Congdon's tarplant *Centromadia parryi* ssp. *Congdonii*	1B.1	Annual herb. Valley and foothill grassland, and alkaline soils sometimes described as heavy white clay.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Contra Costa goldfields *Lasthenia conjugens*	1B.1 FE	Annual herb. Cismontane woodland, playas, valley and foothill grassland, and vernal pools.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Dudley's lousewort *Pedicularis dudleyi*	1B.2 SR	Perennial herb. Chaparral (maritime), cismontane woodland, North Coast coniferous forest, and valley and foothill grassland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Dwarf soaproot *Chlorogalum pomeridianum var. minus*	1B.2	Perennial bulbiferous herb. Chaparral (serpentinite).	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Fragrant fritillary *Fritillaria liliacea*	1B.2	Perennial bulbiferous herb. Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Hairless popcornflower *Plagiobothrys glaber*	1A	Annual herb. Meadows and seeps, marshes and swamps, coastal salt marshes, and alkaline meadows.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Hall's bush-mallow *Malacothamnus hallii*	1B.2	Perennial deciduous shrub. Chaparral and some populations on serpentine.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	1B.1	Annual/Perennial herb. Vernal pools.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Lesser saltscale *Atriplex minuscula*	1B.1	Annual herb. Chenopod scrub, playas, valley and foothill grassland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Species	**Status**	**Lifeform and Habitat**	**Occurrence in Study Area**
Loma Prieta hoita *Hoita strobilina*	1B.1	Perennial herb. Chaparral, cismontane woodland, and riparian woodland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Metcalf Canyon jewelflower *Streptanthus albidus* ssp.*albidus*	1B.1 FE	Annual herb. Valley and foothill grassland (serpentinite).	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Most beautiful jewelflower *Streptanthus albidus* ssp. *peramoenus*	1B.2	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Mt. Hamilton thistle *Cirsium 18ontinales* var. *campylon*	1B.2	Perennial herb. Chaparral, cismontane woodland, and valley and foothill grassland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Point Reyes salty bird's-beak *Chloropyron maritimum* ssp. *Palustre*	1B.2	Annual herb (hemiparasitic). Coastal salt marsh.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Robust spineflower *Chorizanthe robusta* var. *robust*	1B.1 FE	Cismontane woodland. Coastal dunes, coastal scrub, and sandy substrates including terraces, and bluffs.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Rock sanicle *Sanicula saxatilis*	1B.2	Perennial herb. Broadleaved upland forest, chaparral, and valley and foothill grassland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Saline clover *Trifolium hydrophilum*	1B.2	Annual herb. Marshes and swamps, valley and foothill grassland, and vernal pools.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
San Francisco collinsia *Collinsia multicolor*	1B.2	Annual herb. Closed-cone coniferous forest, and coastal scrub.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Species	**Status**	**Lifeform and Habitat**	**Occurrence in Study Area**
San Joaquin spearscale *Extriplex joaquinana*	1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, and valley and foothill grassland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Sanford's arrowhead *Sagittaria sanfordii*	1B.2	Perennial rhizomatous herb (emergent). Marshes and swamps (shallow freshwater).	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Santa Clara Valley dudleya *Dudleya abramsii ssp. Setchellii*	1B.1 FE	Perennial herb. Cismontane woodland, and valley and foothill grassland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Santa Cruz clover *Trifolium buckwestiorum*	1B.1	Annual herb. Broadleaved upland forest, cismontane woodland, and coastal prairie.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Santa Cruz Mountains pussypaws *Calyptridium parryi* var. *hesseae*	1B.1	Annual herb. Opening in chaparral, cismontane woodland, and sometimes gravelly and sandy substrates.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Santa Cruz Mountains beardtongue *Penstemon rattanii* var. *kleei*	1B.2	Perennial herb. Chaparral, lower montane coniferous forest, and North Coast coniferous forest.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Smooth lessingia *Lessingia micradenia* var. *glabrata*	1B.2	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland, often roadsides, and serpentinite.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Western leatherwood *Dirca occidentalis*	1B.2	Perennial deciduous shrub. Broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, and riparian forest and woodland.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
White-flowered rein orchid *Piperia candida*	1B.2	Perennial herb. Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest, and sometimes serpentinite.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Species	**Status**	**Lifeform and Habitat**	**Occurrence in Study Area**
White-rayed pentachaeta *Pentachaeta bellidiflora*	1B.1 FE/SE	Annual herb. Cismontane woodland Valley and foothill grassland and often serpentinite.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Woodland woollythreads *Monolopia gracilens*	1B.2	Annual herb. Openings in broadleaved upland forest, chaparral, cismontane woodland, North Coast coniferous forest, valley and foothill grassland, and serpentinite.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Prostrate vernal pool navarretia *Navarretia prostrata*	1B.2	Annual herb. Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools, and mesic.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
Invertebrates			
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT	San Francisco endemic. Current range is greatly reduced and is patchily distributed in serpentine grasslands or grasslands occurring on similar soil types. Aside from a reintroduction attempt in Edgewood Park in 2007 (San Mateo County), currently restricted to Santa Clara County, California. Primary larval host plant is an annual, native plantain (*Plantago erecta*). Frequently requires the presence of a secondary host plant, either purple owl's-clover (*Castilleja densiflora*) or exserted paintbrush (*Castilleja exserta*).	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Monarch Butterfly *Danaus plexippus*	FC	Occur throughout North America in fields, roadside, open, and wet areas or urban gardens where milkweed and flowering plants are present. Adult monarchs feed on the nectar of many flowers during breeding and migration, but they can only lay eggs on milkweed plants. Monarchs living west of the Rocky Mountain range in North America primarily overwinter in California at sites along the Pacific Coast, roosting in eucalyptus, Monterey pines and Monterey cypress trees.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Conservancy fairy shrimp *Branchinecta conservatio*	FE	Restricted to vernal pools found in California's Central Valley from Tehama County in the north to Merced County in the south. With one outlying population in Ventura County's Interior Coast Ranges.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Crotch's bumble bee *Bombus crotchii*	S1, S2	Open grasslands and scrub. In California where habitat is present.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Mimic tryonia (California brackish water snail) *Tryonia imitator*	S2	Brackish water. In California where habitat is present.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species**.**
Obscure bumble bee *Bombus caliginosus*	S1, S2	Coastal scrub and grasslands in humid and foggy areas. In California where habitat is present.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
Vernal pool tadpole shrimp *Lepidurus packardi*	FE	Found only in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales and other seasonal wetlands in California. Range encompasses the Central Valley, Delta and eastern San Francisco Bay areas. Sacramento County represents important habitat.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Western bumble bee *Bombus occidentalis*	S1	Underground rodent burrows in open west-southwest slopes bordered by trees. In California where habitat is present.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Zayante band-winged grasshopper *Trimerotropis infantilis*	FE	Open sandy areas with sparse low annual and perennial herbs on high ridges with sparse ponderosa pine. Occurs in Zayanate sandhills and Santa Cruz County.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Amphibians			
California tiger salamander *Ambystoma californiense*	FT/ST	Vernal pools or other seasonal water sources for breeding. Upland grasslands with underground refuges (often ground squirrel burrows). Sonoma and Santa Barbara cos., San Francisco Bay Area, Central Valley, Southern San Joaquin Valleyand the Central Coast Range.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Foothill yellow-legged frog *Rana boylii*	SC	Rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. Occurs along the Pacific Coast to the western slopes of the Sierra Nevada and Cascade Mountains.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Fish			

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
Coho salmon – Central California coast ESU	FE/SE	Found in most major river systems in the northern portion of California. From Humboldt County north to the Oregon border, are found in approximately two-thirds of the streams identified as historical habitat. In the southern part of their range, are now absent from all tributaries of San Francisco Bay and many streams south of the Bay. Inhabit small coastal streams, as well as larger rivers, such as the Klamath River system, where they are currently found as far upstream as Iron Gate Dam and the Shasta River. Typically associated with low gradient reaches of tributary streams, which provide suitable spawning areas and good juvenile rearing habitat. Historical records of occurrence of Coho Salmon in 582 California streams, ranging from the Smith River to the Big Sur River on the central coast, but by 1991 had been lost from about half these streams.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Delta smelt *Hypomesus transpacificus*	FT	Endemic to California only occurring in San Francisco Estuary. The life cycle follows the four seasons—spring spawning in fresh water, summer migration/rearing in the low salinity zone, fall maturation in the low salinity zone, and winter upstream migration shortly before spawning. Most spawning happens in tidally influenced backwater sloughs and channel edgewaters. Eggs are adhesive and thought to be released in batches over firm substrates or sand. A euryhaline species, able to tolerate a wide salinity range.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species
Longfin smelt *Spirinchus thaleichthys*	FC/ST	Pelagic fish (occurring mainly in open water habitats) that occur in bays and estuaries from northern CA north along the coast through Alaska. Historically found in the San Francisco Estuary and the Sacramento/San Joaquin Delta (Bay-Delta), Humboldt Bay, and estuaries of the Eel River and Klamath River. Uses a variety of habitats including nearshore waters, sloughs, estuaries, and lower portions of freshwater streams. Reproduction occurs in low salinity to freshwater habitats. The federal candidate status is for the San Francisco Bay-Delta DPS.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
steelhead – central California coast DPS	FT	Anadromous (ocean-going) fish that hatch in gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. DPS includes naturally spawned anadromous steelhead originating below natural and humanmade impassable barriers from the Russian River (Sonoma County) to and including Aptos Creek, and all drainages of San Francisco and San Pablo Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers. Also includes steelhead from two hatchery programs. DPS includes the San Francisco and San Pablo Bay basins but excludes the Sacramento-San Joaquin River basins.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Reptiles			
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/ST	Chaparral and scrub habitats. Will also use adjacent grassland, oak savanna and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows. occurs only in a small area on the east side of the San Francisco Bay in western Contra Costa and Alameda counties and possibly the edge of Santa Clara County.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
California giant salamander *Dicamptodon ensatus*	SSC	California endemic found in temperate forests, rivers, freshwater lakes, and freshwater marshes in northern California.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Coast horned lizard *Phrynosoma blainvillii*	SSC	Open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Found grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Lowlands along sandy washes with scattered shrubs and along dirt roads. Often found near ant hills feeding on ants. Occurs in fragmented populations in the Central Valley and southern coast of California.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Green sea turtle *Chelonia mydas*	FT	Shallow waters of lagoons, bays, estuaries, mangroves, eelgrass and seaweed beds. Prefers abundant aquatic vegetation, such as pastures of sea grasses and algae, in shallow, protected water. Occurs in tropical and subtropical oceans.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
Northern California legless lizard *Anniella pulchra*	SSC	Moist warm loose soil with plant cover. Sparsely vegetated areas of beach dunes, chaparral, pine oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Occurs from Contra Costa County south to Baja, California.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Santa Cruz black salamander *Aneides niger*	SSC	Mixed deciduous woodland, coniferous forests, coastal grasslands. Under rocks near streams, in talus, under damp logs, and other objects. Rarely encountered very far from water. Occurs in San Francisco Bay and south of the San Francisco Peninsula in Santa Cruz County, western Santa Clara County, and southern San Mateo County.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Western pond turtle *Emys marmorata*	SSC	Ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Need basking sites and upland habitat up to 0.5 kilometer from water for egg laying. In California where habitat is present.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Birds			
Alameda song sparrow *Melospiza melodia pusillula*	SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides).	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
American peregrine falcon *Falco peregriunus anatum*	FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open landscape with cliffs (or skyscrapers). In California where habitat is present.	**Not Likely to Occur.** The project area is developed/disturbed and does not consist of high-rise buildings or skyscrapers. No suitable habitat to support this species.
Burrowing owl *Athene cunicularia*	SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. Subterranean nester, dependent on burrowing mammals, most notably, the California ground squirrel. In California where habitat is present.	**Low.** There are known populations of burrowing owl at Mission College 1.5 mile north of the project area and two miles east in open barren areas at the San Jose International Airport; however, there is no suitable habitat to support this species in the project area.

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
Black skimmer *Rynchops niger*	SSC	Coastal areas, usually around sandy beaches and islands, a few colonies can be found in inland locations with very large lake. Nesting birds use open sandy areas, gravel or shell bars with sparse vegetation, or broad mats of wrack (dead vegetation) in saltmarsh. Foraging in tidal waters of bays, estuaries, lagoons, creeks, rivers, ditches, and saltmarsh pools.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Black swift *Cypseloides niger*	SSC	Occur across a wide range of elevations: in British Columbia from sea level to 8,500 feet, in California from sea level to 7,500 feet, and in Oaxaca, Mexico, from 6,800–12,100 feet. Nest on cliff ledges behind or near waterfalls and sea caves. Forage over forests and open areas.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
California black rail *Laterallus jamaicensis coturniculus*	ST/FP	Saltwater marshes and shallow freshwater marshes, wet meadows, and flooded grassy vegetation. Occurs in two disjunct regions: the southwestern USA (western Arizona and southern California) and northern California (Sacramento Valley and the San Francisco Bay area).	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
California clapper rail *Rallus longirostris obsoletus*	FE	Saltmarshes with extensive vegetation, which they use as refuges, especially at high tide. Prefer low portions of coastal wetlands dominated by cordgrass (spartina), pickleweed, mangroves, and other vegetation. Occurs in remnant tidal marshes of San Francisco Bay.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
California condor *Gymnogyps californianus*	FE	Reintroduced to mountains of southern and central California, Arizona, Utah, and Baja California. Nesting habitats range from scrubby chaparral to forested mountain regions up to about 6,000 feet elevation. Foraging areas are in open grasslands and can be far from primary nesting sites, requiring substantial daily commutes. Glide and soar when foraging, so they depend on reliable air movements and terrain that enables extended soaring flight.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
California least tern *Sternula antillarum*	FE/SE	Nest in colonies on sandy, shelly beaches or islands on coastlines and rivers. They sometimes also nest in gravel pits, on dredge spoil, on flat gravel rooftops, or on dry mudflats. On rare occasions, parking lots, agricultural fields, and airports have hosted small colonies. In all of these settings, vegetation is sparse or absent. Generally, return each year to past nest sites, but changes in nearby prey availability, predators, human activity, or substrate conditions can prompt them to move to other sites. Feeding at almost any aquatic environment, including oceans, bays, estuaries, rivers, streams, sloughs, dike fields, marshes, ponds, sand pits, and reservoirs.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
California Ridgway's rail *Rallus obsoletus obsoletus*	FE/SE FP	Tidal and brackish marshes. Occurs in the marshes of the San Francisco Bay Estuary.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Cooper's hawk *Accipiter cooperii*	WL	Wooded habitats from deep forests to leafy subdivisions and backyards. In California where habitat is present.	**Moderate.** Potential for marginal foraging habitat. Multiple observations within five miles of the project area.
Golden eagle *Aquila chrysaetos*	FP	Open and semi open country featuring native vegetation across most of the Northern Hemisphere. They avoid developed areas and uninterrupted stretches of forest. Found primarily in mountains up to 12,000 feet, canyonlands, rimrock terrain, and riverside cliffs and bluffs. Nest on cliffs and steep escarpments in grassland, chapparal, shrubland, forest, and other vegetated areas.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Marbled murrlet *Brachyramphus marmoratus*	FT	Nests in moist open canopy coastal coniferous forests, usually within a few miles of the ocean and especially in old-growth forests, where large trees with broad, mossy limbs provide ideal natural nest platforms. Epiphytic moss is important. Key tree species for nesting are Douglas-fir, Alaska yellow cedar, western redcedar, western hemlock, mountain hemlock, Sitka spruce, and coast redwood. May nest up to 4,000 feet elevation, especially where continuous forested habitat is present from the coast into the interior.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
Osprey *Pandion haliaetus*	WL	Any expanse of shallow, fish-filled water, including rivers, lakes, reservoirs, lagoons, swamps, and marshes. Frequenting deep water only where fish school near the surface. Nest in a wide variety of locations, from Alaska to New England, Montana to Mexico, Carolina to California; their habitat includes an adequate supply of accessible fish within a maximum of about 12 miles of the nest.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Purple martin *Progne subis*	SSC	In the West, nest in woodpecker holes in mountain forests or Pacific lowlands. Wintering grounds are savannas and agricultural fields in Bolivia, Brazil, and elsewhere in South America. At night, wintering martins flock into cities and towns to roost, often in the trees of village plazas. Forage over towns, cities, parks, open fields, dunes, streams, wet meadows, beaver ponds, and other open areas.	**Low.** The project area has potential marginal foraging and nesting habitat. Observed two miles east in open barren areas at the San Jose International Airport.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	SSC	Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Swainson's hawk *Buteo swainsoni*	ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations. Occurs throughout Central Valley.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Tricolored blackbird *Agelaius tricolor*	SSC SC	Highly colonial species, most numerous in Central Valley and vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Western snowy plover *Charadrius alexandrines nivosus*	FT/SSC	Coastal beaches, sand spits, dune-back beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT/SE	Riparian habitat, cottonwood and willow trees. Occurs along Sacramento River from Red Bluff to Colusa, along the South Fork of the Kern River, and portions of the Lower Colorado River.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
White-tailed kite *Elanus leucurus*	FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. Occurs along the California coast and inland to the Central Valley.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Yellow rail *Coturnicops noveboracensis*	SSC	Shallow marshes, and wet meadows; in winter, drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields. Occurs in the San Francisco Bay.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Mammals			
Pallid bat *Antrozous pallidus*	SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. Occurs throughout California except for high Sierra Nevada from Shasta to Kern cos., and the northwestern corner of California from Del Norte and western Siskiyou cos. to northern Mendocino Co.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Salt-marsh harvest mouse *Reithrodontomys raviventris*	FE/SE FP	Saltmarshes, diked and tidal wetlands, pickleweed. Occurs in the San Francisco Bay Estuary and some areas of Suisun Bay.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Salt-marsh wandering shrew Sorex vagrans halicoetes	SSC	Saltmarshes and coastal wetlands. In California where habitat is present.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	SSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nestbuilding materials. Occurs in the San Francisco Bay area and Santa Cruz County.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.

Special-Status Species Occurrence Potential in the Project Vicinity			
Wildlife Species	**Status**	**Location and Habitat**	**Occurrence in Study Area**
San Joaquin kit fox *Vulpes macrotis mutica*	FE	Occurs throughout much of the valley floor and foothills of the San Joaquin Valley in California, from San Joaquin County in the north to Kern County in the south. Range also includes valleys along the Coast Range, including the Panoche and Cuyama valleys and the Carrizo Plain in San Luis Obispo County. Inhabits grasslands and scrublands, many of which have been extensively modified including areas with oil exploration and extraction equipment and wind turbines, and agricultural mosaics of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands.	**Not Likely to Occur.** The project area is developed/disturbed. No suitable habitat to support this species.
Townsend's big-eared bat *Corynorhinus townsendii*	SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Low.** The project area provides marginal roosting habitat, but species is highly sensitive to human activity.

STATUS CODES:

FT Federally Threatened
FC Federal Candidate
SE State Endangered
SC State Candidate
SSC California Species of Special Concern
FP CDFW Fully Protected
WL CDFW Watch List
CNPS California Native Plant Society Listing
1A Plants presumed extinct in California
1B Plants Rare, Threatened, or Endangered in California and elsewhere
2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3 Plants about which we need more information – a review list
4 Plants of limited distribution – a watch list
.1 Seriously threatened in California (high degree/immediacy of threat)
.2 Fairly threatened in California (moderate degree/immediacy of threat)
.3 Not very threatened in California (low degree/immediacy of threats or no current threats known)

STATE RANKING The state rank (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

S1 Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

S2 Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.

Appendix D

Natural Gas Supplemental Information

Appendix D: Natural Gas Supplemental Information

Natural Gas Internal Combustion Engines

Introduction

Staff has researched the difference in cost, supply, and emissions of using natural-gas-fueled internal combustion engines (ICEs) in place of conventional petroleum diesel for the emergency backup generators proposed for this project. Currently, there is limited information available on the fuel supply reliability of natural gas delivered to the site by pipeline versus the reliability of delivering liquid petroleum diesel by tanker truck to the site. However, most backup generators currently in place use diesel. A nationwide survey in 2016 revealed that 85 percent of the emergency backup generation was served by diesel, while 10 percent was served by natural gas and the remainder by propane.[1]

Cost Difference Between Natural Gas and Petroleum Diesel Emergency Backup Generators

The reliability of a system is an important consideration when selecting an emergency backup generator. But cost is important as well. Many factors contribute to the life-cycle costs of a backup system, such as equipment, maintenance, and fuel costs.

Both natural gas ICEs and diesel engines are reciprocating engines. They are available in sizes up to 18 megawatts (MW). The fast start-up capability of reciprocating engines allows for the timely resumption of the system following a maintenance procedure. In peaking or emergency power applications, reciprocating engines can quickly supply electricity on demand. The annual energy cost ($/MMBtu [million British thermal unit]) for natural gas fuel is lower than conventional diesel. But diesel generators generally have a lower component cost than ICEs. It is notable that improvements in ICEs and recently promulgated air quality regulations have reduced some of the cost advantages of diesel systems.

The size of the engines can impact operating cost. If switching from one generating technology to another requires more engines to deliver the same total MW capacity, the repair and maintenance frequency and testing requirements could increase, which may result in an increase in associated costs.

Space Needs

Diesel-fueled emergency backup generators are typically built on a rack over their fuel supply tank, requiring space between each generator and a staircase and service deck at the elevation of the diesel engine. Based on Figure 2.4 in the SPPE application, staff

1 National Renewable Energy Laboratory report. A Comparison of Fuel Choices for Backup Generators; https://www.nrel.gov/docs/fy19osti/72509.pdf.

estimated the footprint of the 32 engines proposed at the project site as approximately 0.44 acres for 96 MW (peak power) or approximately 218 MW per acre.

Enchanted Rock, a vendor for natural gas ICEs, provided a drawing showing how they would arrange their engines at a typical site. The result was an approximate capacity of 78 MW per acre.

Natural Gas ICE Emissions Compared to Petroleum Diesel

Criteria Air Pollutant and Carbon Dioxide Emissions Comparison

Staff compared criteria air pollutant emissions and carbon dioxide (CO_2) emissions of natural gas ICEs against the proposed diesel-fired engines for the project. The proposed diesel engines would be equipped with selective catalytic reduction (SCR) and diesel particulate filter (DPF) to achieve compliance with Tier 4 emission standards. However, it takes time for the SCR to reach the activation temperature and become fully effective in controlling oxides of nitrogen (NOx) emissions. Depending on load, the SCR would be expected to kick on within 15 minutes.

Information for the natural gas ICEs is primarily based on the data provided for the Small Power Plant Exemption application for the San Jose Data Center (Jacobs 2021a). The natural gas ICEs for the recently exempted San Jose Data Center (19-SPPE-04) would be equipped with a 3-way catalyst system to reduce emissions of NOx, carbon monoxide (CO), volatile organic compounds (VOC), and air toxics. The applicant for the San Jose Data Center also assumed 15 minutes of operation with uncontrolled emissions and 45 minutes of operation with controlled emissions to estimate hourly emissions (Jacobs 2021b).

Table D-1 compares the emission factors in pounds per megawatt electrical-hour (lbs/MWe-hr) for the proposed Cumming QSK95 engines, which are the majority of the diesel engines proposed at the project, and those for the natural gas ICEs proposed at the San Jose Data Center. Staff assumed the same 15-minute warm up period for the SCRs of the diesel engines and the 3-way catalyst system for the natural gas ICEs.

It should be noted that the emission factors for the proposed Cumming QSK95 engines shown in **Table D-1** are based on the use of petroleum-based diesel. However, the applicant has proposed to use renewable diesel as the primary fuel for the engines, with ultra-low sulfur diesel serving as a secondary fuel when renewable diesel is unavailable. The California Air Resources Board's (CARB) 2021 testing report (CARB 2021) shows that for diesel engines with SCR and DPF, there are no statistically significant differences in NOx, particulate matter (PM), and total hydrocarbon emissions using renewable diesel when compared to using ultra-low sulfur petroleum-based diesel. For CO emissions, there are either no statistically significant differences (or emissions were already below background levels) between renewable diesel and ultra-low sulfur petroleum-based diesel or 5 to 44 percent decrease using renewable diesel compared to ultra-low sulfur petroleum-based diesel, depending on the testing cycle used. Ideally, this should be

confirmed with testing under controlled conditions in the same size of engine proposed for this facility and using the same source test cycle used for engine certification. With the currently available information, staff expects the comparison results of criteria air pollutant emissions of the natural gas ICEs alternative to the proposed diesel engines using renewable diesel would be similar to those shown for conventional ultra-low sulfur diesel in **Table D-1**, except that the exact reduction percentage in CO emissions may be a little different depending on the testing cycle used.

Toxics Emissions

Staff is not able to find data comparing toxics emissions of natural gas ICEs with those for diesel engines. However, these are expected to be reduced due to the reductions reported above for VOCs and PM.

TABLE D-1 CRITERIA AIR POLLUTANT AND CARBON DIOXIDE EMISSIONS NATURAL GAS ICE VERSUS PETROLEUM DIESEL ICE

	Units	Proposed Engine (Cumming QSK95) with Petroleum Diesel	Natural Gas ICE	Difference	Percent Difference (%)
NOx	Lbs/MWe-hr	4.83	0.09	-4.74	-98.2
PM	Lbs/MWe-hr	0.05	0.01	-0.04	-78.9
VOC	Lbs/MWe-hr	0.44	0.10	-0.34	-76.9
CO	Lbs/MWe-hr	8.23	1.68	-6.56	-79.6
SO_2	Lbs/MWe-hr	0.02	0.009	-0.01	-46.0
CO_2	Lbs/MWe-hr	1,573	1,440	-133	-8.4

Sources: GI Partners 2022c, Jacobs 2021a, and California Energy Commission staff analysis

Fuel-Cycle Greenhouse Gas Emissions Comparison

Table D-1 shows that the tailpipe CO_2 emissions of natural gas ICEs would be about 8.4 percent lower than those for the proposed engines with the use of ultra-low sulfur petroleum-based diesel. However, the applicant has proposed to use renewable diesel as primary fuel in the proposed engines. The CARB's 2021 testing report (CARB 2021) shows that the tailpipe CO_2 emissions would reduce about 3 to 4 percent using renewable diesel compared to ultra-low sulfur petroleum-based diesel. Therefore, the tailpipe CO_2 emissions of natural gas ICEs would only be about 4 to 5 percent lower than those for the proposed engines using renewable diesel. Ideally, this should be confirmed with testing under controlled conditions in the size of engine proposed for this facility. However, to have a more complete understanding of the impact of replacing diesel with natural gas, it is necessary to examine the full fuel-cycle of each fuel from origin to use. This is because greenhouse gas emissions (GHG) have a global impact rather than a local impact.

To compute full fuel-cycle GHG emissions, a model called GREET[2] is commonly used to evaluate full fuel-cycle GHG emissions for transportation. Although staff has not computed fuel-cycle emissions using GREET, we can estimate the relative change in GHG emissions using carbon intensity values from the Low Carbon Fuel Standard (LCFS) program. Carbon intensity values obtained from the program[3] can be used to estimate the expected GHG emissions reductions associated with switching from ultra-low sulfur petroleum-based diesel to renewable diesel and natural gas in this project. CARB staff use a version of GREET called CA-GREET to compute carbon intensity values for the LCFS program.[4] GREET results should be combined with stack emissions shown above to get an understanding of the relative GHG emissions associated with both natural gas ICEs and petroleum diesel ICEs.

Table D-2 shows the carbon intensity values of renewable diesel and natural gas compared to ultra-low sulfur petroleum-based diesel. For renewable diesel, the data shown in **Table D-2** are CARB-estimated values for Neste reformulated diesel supplied from various feedstocks with the renewable diesel produced at the Neste refinery located in Singapore. These carbon intensity values include the feedstock and transport to California via oceangoing tanker. For comparison purposes, the carbon intensity for ultra-low sulfur petroleum-based diesel/CARB diesel has a value of 100.45, as shown at the bottom of the table. **Table D-2** shows that there are 61 to 83 percent reduction in carbon intensity values using renewable diesel in place of ultra-low sulfur petroleum-based diesel. However, renewable diesel still has some carbon associated with the fuel-cycle, as evidenced by the carbon intensity values in **Table D-2** not being zero, so additional measures would be needed before the project could be considered a carbon-free facility.

Carbon intensity values shown in **Table D-2** indicate that natural gas ICEs fueled with pipeline natural gas produced from fossil feedstocks have a carbon intensity about 20 percent lower than petroleum diesel. Natural gas feedstocks from renewable feedstocks have a carbon intensity that is much lower, with most of the renewable feedstocks

2 Greenhouse gases, Regulated Emissions, and Energy use in Transportation. Available from Argonne National Labs. From the Arbonne web site: Analysis of transportation systems on a life-cycle basis permits us to better understand the breadth and magnitude of impacts produced when vehicle systems are operated on different fuels or energy options like electricity or hydrogen. Such detailed analysis also provides the granularity needed to investigate policy implications, set R&D goals, and perform follow-on impact and policy assessments. US Department Energy's Office of Energy Efficiency and Renewable Energy, Systems Assessment Group in Argonne's Energy Systems Division has been developing the GREET model to provide a common, transparent platform for lifecycle analysis (LCA) of alternative combinations of vehicle and fuel technologies. Vehicle technologies include conventional internal combustion engines, hybrid electric systems, battery electric vehicles, and fuel cell electric vehicles. Fuel/energy options include petroleum fuels, natural gas-based fuels, biofuels, hydrogen, and electricity. LCAs conducted with the GREET platform permit consideration of a host of different fuel production, and vehicle material and production pathways, as well as alternative vehicle utilization assumptions. GREET includes all transportation modes – on-road vehicles, aircraft, marine vessels, and rail (to be added in a new GREET release). The Systems Assessment Group has conducted various LCAs of vehicle/fuel systems for DOE and other agencies. There are more than 20,000 registered GREET users.

3 https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities

4 https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities.

associated with a net reduction in fuel-cycle carbon emissions. In other words, these feedstock options act as a way of capturing GHG emissions that would otherwise escape. Negative values in **Table D-2** below reflect this outcome. Converting these feedstocks into a fuel would provide substantial societal benefits since the feedstock would otherwise be contributing directly to global warming. In order for the natural gas ICEs to remain an environmentally superior alternative to the proposed project using renewable diesel for GHG, it would be required to use certain percentage of renewable natural gas to reduce the fuel cycle GHG emissions.

A recent study done for the State Water Resources Control Board by Carollo Engineers[5] published in June 2019 illustrates how food wastes can be converted to renewable natural gas and achieve significant GHG emissions reductions. Through the co-digestion of food waste diverted from landfills and processed in anaerobic digesters, municipal wastewater treatment plants have the potential to produce, capture, and make beneficial use of biogas, which is a renewable source of methane.

The Carollo report stated that landfills accounted for approximately 8,560,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) emissions as methane in 2016, or about 22 percent of statewide methane emissions. They estimated that by the year 2030, approximately 3.4 million short wet tons of food waste could be diverted from landfills to municipal wastewater treatment plants for co-digestion and processing into renewable natural gas for beneficial use. This would reduce methane emissions from landfills and reduce GHG emissions from this sector by up to approximately 2.4 $MMTCO_2e$.

TABLE D-2 CARBON INTENSITY VALUES COMPUTED FROM CA-GREET MODEL

Feedstock	Carbon Intensity	Percent Reduction from Petroleum Diesel (%)
Renewable Diesel		
Asian-sourced used cooking oil	16.89	-83
Globally averaged used cooking oil	25.61	-75
Southeast Asian fish oil	33.08	-67
North American tallow	34.19	-66
New Zealand tallow	34.81	-65
Australian tallow	36.83	-63
Midwest corn oil	37.39	-63
Globally averaged tallow	39.06	-61
Natural Gas		
PG&E Gas	80.59	-19.7
Average Pipeline Gas	79.21	-21.1
SoCal Gas	78.21	-22.1
Landfill Gas	-5.28 to 62.30	-105 to -38
Food Wastes	-22.93	-122
Dairy Manure	-377.83 to -192.49	-476 to -292

5 WRCB, Co-Digestion Capacity In California; Co-Digestion Capacity Analysis Prepared for the California State Water Resources Control Board under Agreement #17-014-240.June 2019. Available online at: https://www.waterboards.ca.gov/water_issues/programs/climate/docs/co_digestion/final_co_digestion_capacity_in_california_report_only.pdf.

TABLE D-2 CARBON INTENSITY VALUES COMPUTED FROM CA-GREET MODEL		
Feedstock	**Carbon Intensity**	**Percent Reduction from Petroleum Diesel (%)**
Renewable Natural Gas	-630.72 to -151.41	-728 to -251
Ultra-Low Sulfur Diesel/CARB Diesel	100.45	0

While renewable natural gas would result in a net reduction in fuel-cycle carbon emissions, a 2018 report funded by the California Public Utilities Commission (CPUC) evaluated issues with injecting fuels other than natural gas into natural gas pipelines. The report was titled: *Biomethane in California Common Carrier Pipelines: Assessing Heating Value and Maximum Siloxane Specifications -- An Independent Review of Scientific and Technical Information*.[6] Assembly Bill 1900 (Gatto, Chapter 602, Statutes of 2012), which became operative beginning in 2013, required, among other things, that the CPUC review and upgrade as appropriate specifications for adding biogas to the state's existing natural gas pipeline system.

In 2006 the CPUC adopted Decision 06-09-039 increasing the specified minimum allowable biomethane heating value from 970 British thermal unit per standard cubic foot of gas (BTU/scf) to 990 BTU/scf.

In 2014 the CPUC adopted Decision 14-01-034, which included additional gas quality specification requirements that biogas would need to meet before it could be added to natural gas pipelines, including a maximum siloxane content of 0.1 mg siloxane per cubic meter of gas (mg/m^3). This level was set to protect against equipment damage and catalyst poisoning.

The 2018 CPUC report recommends that CPUC conduct further work to determine the acceptability of allowing a heating value as low as 970 BTU/scf, which is the value that was allowed before the 2006 CPUC decision to increase the heating value to 990 BTU/scf.

The 2018 CPUC report stated that siloxanes are not expected to be present in dairy waste, agriculture waste, or forestry residues. It concluded that these sources could be held to a reduced and simplified verification regime.

Further work may be needed to integrate renewable natural gas into the existing natural gas pipeline system in a cost-effective manner.

Contracting to obtain rights for renewable gas would lead to greater GHG benefits. This can be accomplished simply by displacement if the issues identified above can be resolved, assuming that the location of the use of the renewable natural gas is different from the source of the renewable natural gas unless they are close enough together to use a dedicated pipeline.

6 See: https://ccst.us/wp-content/uploads/2018biomethane.pdf

As shown in **Table D-2**, fossil natural gas and some forms of renewable natural gas still has some carbon associated with the fuel cycle. These show up in the table for those fuels with a carbon intensity that is greater than zero. In these cases, additional measures could be needed before the project would be considered a carbon-free facility.

References

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Appendix E

Mailing List

Appendix E: Mailing List

The following is the mailing list for the Bowers Backup Generating project.

The following is a list of the State agencies that received State Clearinghouse notices and documents:

- California Air Resources Board (ARB)
- California Department of Transportation, District 4 (DOT)
- California Department of Water Resources (DWR)
- California Energy Commission
- California Natural Resources Agency
- California Public Utilities Commission (CPUC)
- California Regional Water Quality Control Board, San Francisco Bay Region 2 (RWQCB)
- Department of Toxic Substances Control, Office of Historic Preservation
- San Francisco Bay Conservation and Development Commission (BCDC)
- State Water Resources Control Board, Division of Water Quality
- California Native American Heritage Commission (NAHC)
- California Department of Fish and Wildlife, Bay Delta Region 3 (CDFW)

Table E-1 presents the list of occupants and property owners contiguous to the project site.

Table E-2 presents the list of agencies, including responsible and trustee agencies and libraries.

Table E-3 presents the list of interested parties.

TABLE E-1 OWNERS AND OCCUPANTS OF PROPERTY CONTIGUOUS TO PROJECT SITE				
Name	**Address**	**City**	**State**	**Zip**
SANTA CLARA CITY OF	1500 WARBURTON AVE	SANTA CLARA	CA	95050
OCCUPANT	2855 BOWERS AVE	SANTA CLARA	CA	95051-0917
OCCUPANT	2845 BOWERS AVE	SANTA CLARA	CA	95051-0917
OCCUPANT	2790 WALSH AVE	SANTA CLARA	CA	95051-0963
OCCUPANT	2710 WALSH AVE	SANTA CLARA	CA	95051-0963
GI ETS SANTA CLARA WB LLC	188 THE EMBARCADERO	SAN FRANCISCO	CA	94105-1247
WALSH INVESTMENT PROPERTIES LLC	2630 WALSH AVE	SANTA CLARA	CA	95051-0905
OCCUPANT	2590 WALSH AVE	SANTA CLARA	CA	95051-1315
VANTAGE DATA CENTERS CA31 LLC	2820 NORTHWESTERN PKWY	SANTA CLARA	CA	95051-0904
OCCUPANT	2975 BOWERS AVE	SANTA CLARA	CA	95051-0955
ARTI INVESTMENT PROPERTIES LLC +PANOMARK PROPERTIES LLC	39 VICTORIA RD	BURLINGAME	CA	94010-2956
OCCUPANT	2737 WALSH AVE	SANTA CLARA	CA	95051-0965
FLOVIN RICK A (TRUSTEE) & FLOVIN RENA A (TRUSTEE)	1293 PALAMOS AVE	SUNNYVALE	CA	94089-2309
OCCUPANT	2727 WALSH AVE	SANTA CLARA	CA	95051-0956
WALSH PROFESSIONAL BUILDING LLC	1241 W HEDDING ST	SAN JOSE	CA	95126-1760
BODO MARTIN (TRUSTEE)	2695 WALSH AVE	SANTA CLARA	CA	95051-0920
VANTAGE DATA CENTERS 4 LLC	2820 NORTHWESTERN PKWY	SANTA CLARA	CA	95051-0904
VANTAGE DATA CENTERS 3 LLC	2880 NORTHWESTERN PKWY	SANTA CLARA	CA	95051-0904
OCCUPANT	2550 WALSH AVE	SANTA CLARA	CA	95051-1345
JJ & W-WALSH LLC	2490 CHARLESTON RD	MOUNTAIN VIEW	CA	94043-1627
OCCUPANT	2500 WALSH AVE	SANTA CLARA	CA	95051-1315
COLE OFC SANTA CLARA (WALSH) CA LP	PO BOX 847	CARLSBAD	CA	92018-0847
OCCUPANT	2551 WALSH AVE	SANTA CLARA	CA	95051-1316
CHUNYUAN PHOTONICS LLC	2701 NORTHWESTERN PKWY	SANTA CLARA	CA	95051-0947

TABLE E-2 AGENCIES AND LIBRARIES							
First Name	**Last Name**	**Title**	**Agency**	**Address**	**City**	**State**	**Zip**
XUNA	CAI	SUPERVISING AIR QUALITY ENGINEER	BAQMD, ENGINEERING DIVISION	375 BEALE STREET, SUITE 600	SAN FRANCISCO	CA	94105
PAMELA	LEONG	DIRECTOR, OFFICER	BAAQMD, ENGINEERING DIVISION	375 BEALE STREET, SUITE 600	SAN FRANCISCO	CA	94105
WENDY	GOODFRIEND		BAAQMD, PLANNING AND CLIMATE PROTECTION	375 BEALE STREET, SUITE 600	SAN FRANCISCO	CA	94105
ERIN	CHAPPELL	REGIONAL MANAGER	CA. DEPT. OF FISH AND WILDLIFE, BAY DELTA REGION (REGION 3)	2825 CORDELIA ROAD SUITE 100	FAIRFIELD	CA	94534
REBECCA	FANCHER	STAFF AIR POLLUTION SPECIALIST	CALIFORNIA AIR RESOURCES BOARD	1001 I ST	SACRAMENTO	CA	95814
COURTNEY	GRAHAM	MANAGER	CALIFORNIA AIR RESOURCES BOARD, ENFORCEMENT DIVISION	1001 I ST	SACRAMENTO	CA	95814
KERRI	KISKO	ENVIRONMENTAL SCIENTIST	CALIFORNIA DEPARTMENT OF CONSERVATION	801 K STREET, MS 14-15	SACRAMENTO	CA	95814
			CALIFORNIA INDEPENDENT SYSTEM OPERATOR	250 OUTCROPPING WAY	FOLSOM	CA	95630
ELAINE	SISON-LEBRILLA	MANAGER--CEQA AND FERC BRANCH	CALIFORNIA PUBLIC UTILITIES COMMISSION	505 VAN NESS AVENUE	SAN FRANCISCO	CA	94102
GLORIA	SCIARA	DEVELOPMENT REVIEW OFFICER	CITY OF SANTA CLARA PLANNING DIVISION	1500 WARBURTON AVENUE	SANTA CLARA	CA	95050
FREDERICK	CHUN	ASSISTANT FIRE MARSHALL	CITY OF SANTA CLARA--FIRE PREVENTION/HAZARDOUS MATERIALS	1675 LINCOLN STREET	SANTA CLARA	CA	95050 -4653
BEN	AGHEGNEHU		COUNTY OF SANTA CLARA ROADS AND AIRPORT DEPARTMENT	101 SKYPORT DRIVE	SAN JOSE	CA	95110
			COUNTY OF SANTA CLARA, OFFICE OF THE CLERK RECORDER	70 WEST HEDDING STREET	SAN JOSE	CA	95110

TABLE E-2 AGENCIES AND LIBRARIES							
First Name	**Last Name**	**Title**	**Agency**	**Address**	**City**	**State**	**Zip**
SHAUNN	MENDRIN	PLANNING OFFICER	CITY OF SUNNYVALE	456 W. OLIVE AVE.	SUNNVALE	CA	94086
KARLA	NEMETH	DIRECTOR	DEPARTMENT OF WATER RESOURCES	P.O. BOX 942836	SACRAMENTO	CA	94236 -0001
BRIAN	MCALOON		DEPARTMENT OF TOXIC SUBSTANCES CONTROL	8800 CAL CENTER DRIVE	SACRAMENTO	CA	95826 -3200
JULIE	PETTIJOHN	BRANCH CHIEF BERKELEY/HQ	DEPARTMENT OF TOXIC SUBSTANCES CONTROL	700 HEINZ AVENUE SUITE 200	BERKELEY	CA	94710 -2721
KATHERINE	KENNEDY	AIRPORT PLANNER	FEDERAL AVIATION ADMINISTRATION (FAA)	1000 MARINA BOULEVARD, SUITE 220	BRISBANE	CA	94005
REBECCA	BUSTOS	STAFF LIAISON	HISTORICAL AND LANDMARKS COMMISSION	1500 WARBURTON AVENUE	SANTA CLARA	CA	95050
DAN	RIVAS		CALTRANS DISTRICT 4, OFFICE OF LOCAL ASSISTANCE	P.O. BOX 23660	OAKLAND	CA	94623 -0660
LAURA	MIRANDA	COMMISSIONER	NATIVE AMERICAN HERITAGE COMMISSION	1550 HARBOR BLVD, SUITE 100	WEST SACRAMENTO	CA	95691
WADE	CROWFOOT	SECRETARY	CALIFORNIA NATURAL RESOURCES AGENCY	715 P STREET	SACRAMENTO	CA	95814
JAMES	BOOTH	DISTRICT CONSERVATIONIST	NATURAL RESOURCES CONSERVATION SERVICES	2337 TECHNOLOGY PKWY., SUITE C	HOLLISTER	CA	95023 -2544
FAIYAZ	ALI	DEPUTY DIRECTOR	NORMAN Y. MINETA SAN JOSÉ INTERNATIONAL AIRPORT, AVIATION DEPARTMENT	1701 AIRPORT BOULEVARD, SUITE B-1130	SAN JOSE	CA	95110 -1206
			SAN FRANCISCO BAY CONSERVATION & DEVELOPMENT COMMISSION	375 BEALE STREET, SUITE 510	SAN FRANCISCO	CA	94105
KEITH	LICHTEN	DIVISION CHIEF	SAN FRANCISCO BAY RWQCB, REGION 2	1515 CLAY SUITE 1400	OAKLAND	CA	94612
DANIEL	WELSH	DEPUTY FIELD SUPERVISOR	SAN FRANCISCO BAY-DELTA FISH AND WILDLIFE OFFICE	650 CAPITOL MALL, SUITE 8-300	SACRAMENTO	CA	95814

TABLE E-2 AGENCIES AND LIBRARIES							
First Name	**Last Name**	**Title**	**Agency**	**Address**	**City**	**State**	**Zip**
			COUNTY OF SANTA CLARA ROADS AND AIRPORT DEPARTMENT	101 SKYPORT DRIVE	SAN JOSE	CA	95110
RUBEN	TORRES	FIRE CHIEF	SANTA CLARA FIRE DEPARTMENT, FIRE STATION NO. 1 /FIRE ADMINISTRATION	777 BENTON STREET	SANTA CLARA	CA	95050
			SANTA CLARA FIRE STATION #2	1900 WALSH AVE	SANTA CLARA	CA	95050
GERRY	HAAS	PROGRAM MANAGER	SANTA CLARA VALLEY HABITAT AGENCY	535 ALKIRE AVENUE	MORGAN HILL	CA	95037
			SANTA CLARA VALLEY TRANSPORTATION AUTHORITY	3331 NORTH FIRST STREET	SAN JOSE	CA	95134 -1927
COLLEEN	HAGGERTY		SANTA CLARA VALLEY WATER DISTRICT-- COMMUNITY PROJECTS REVIEW UNIT	5750 ALMADEN EXPRESSWAY	SAN JOSE	CA	95118
WENDY	STONE	PROGRAM MANAGER, CUSTOMER DEVELOPMENT	SILICON VALLEY POWER	1500 WARBURTON AVENUE	SANTA CLARA	CA	95050
KEVIN	KEATING	ELECTRIC DIVISION MANAGER	SILICON VALLEY POWER (CITY OF SANTA CLARA)	1500 WARBURTON AVENUE	SANTA CLARA	CA	95050
PHILLIP	CRADER	ASST. DEPUTY DIRECTOR	STATE WATER RESOURCES CONTROL BOARD, WATER QUALITY DIVISION	P.O. BOX 100	SACRAMENTO	CA	95812 -0100
RYAN	OLAH	DIVISION SUPERVISOR	US FISH & WILDLIFE SERVICE, SACRAMENTO FISH & WILDLIFE OFFICE, COAST BAY DIVISION	2800 COTTAGE WAY RM W-2605	SACRAMENTO	CA	95825
RYAN	SHEELEN	AIRPORT PLANNER	NORMAN Y. MINETA SAN JOSÉ INTERNATIONAL AIRPORT, PLANNING & DEVELOPMENT	1701 AIRPORT BLVD STE B-1130	SAN JOSE	CA	95110

TABLE E-2 AGENCIES AND LIBRARIES

First Name	Last Name	Title	Agency	Address	City	State	Zip
MARK	CONOLLY	SENIOR PLANNER	SANTA CLARA COUNTY PLANNING COMMISSION, DEPARTMENT OF PLANNING AND DEVELOPMENT	70 WEST HEDDING STREET, 7TH FLOOR	SAN JOSE	CA	95110
NIMISHA	AGRAWAL	ASSOCIATE PLANNER	CITY OF SANTA CLARA COMMUNITY DEVELOPMENT DEPARTMENT	1500 WARBURTON AVENUE	SANTA CLARA	CA	95050
NICOLE	WAUGH		CEC - ENERGY LIBRARY	715 P STREET, MS-10	SACRAMENTO	CA	95814-5504
			MILPITAS LIBRARY	160 N MAIN STREET	MILPITAS	CA	95035
		LIBRARIAN	NORTHSIDE BRANCH LIBRARY	695 MORELAND	SANTA CLARA	CA	95054-5134

TABLE E-3 INTERESTED PARTIES

First Name	Last Name	Organization	Address	City	State	Zip
JANET	LAURAIN	ADAMS BROADWELL JOSEPH & CARDOZO	520 CAPITOL MALL, SUITE 350	SACRAMENTO	CA	95814