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CA3 Backup Generating Facility - Vantage

Final Environmental Impact Report
Part 3 of 4

CALIFORNIA
ENERGY
COMMISSION
Gavin Newsom,
Governor

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FINAL ENVIRONMENTAL IMPACT REPORT

CA3 Backup Generating Facility

(21-SPPE-01)

Lead Agency

California Energy Commission

March 2022

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Section 4

Environmental Setting and Environmental Impacts (cont.)

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 Except as provided in Public Resources Code Section 21099, would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Have a substantial adverse effect, 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 is located on an approximately 6.69-acre site within a commercial and industrial area in the city of Santa Clara, California (DayZenLLC 2021e). Construction of the proposed project would occur on a Light-Industrial-zoned property, which is currently developed with an approximately 115,000-square-foot single-story office and

warehouse building and associated paved surface parking and loading dock (DayZenLLC 2021e). The adjacent existing properties consist of industrial facilities to the northwest and northeast, a Caltrain railroad line to the south, a Silicon Valley Power (SVP) substation to the west, and the Vantage Santa Clara Data Center Campus CA1 to the east across Walsh Avenue (DayZenLLC 2021e). The Norman Y. Mineta San Jose International Airport (SJC) is located approximately 1.75 miles to the southeast. Mature native and non-native trees and other ornamental landscaping are located along the Walsh Avenue frontage of the property, as well as the northern, western, and southern property boundaries and throughout the parking area and outdoor areas of the existing office building.

Due to the developed nature of the project site and surrounding areas, as well as on-going disturbance, the site does not provide habitat capable of supporting a diverse assemblage of native plants or wildlife. However, the project site does provide suitable habitat for nesting and foraging birds and minimal habitat for other foraging common wildlife. Reconnaissance-level surveys for biological resources were conducted for the proposed project by a FirstCarbon Solutions biologist on February 24, 2021 (DayZenLLC 2021e). No special-status plant or wildlife species were identified in the area during the surveys (DayZenLLC 2021e). Urban adapted species, such as western fence lizard (*Sceloporus occidentalis*), American crow (*Corvus brachyrhynchos*), and house finch (*Haemorhous mexicanus*), may tolerate the conditions of disturbed habitats (Mayer & Laudenslayer, Jr. 1988) and were observed during the site visit by the applicant's biologist. Other common wildlife species observed during surveys included rock pigeon (*Columba livia*) and Anna's hummingbird (*Calypte anna*). No small mammal burrows were observed on site. However, common wildlife, such as racoons, opossums, and rats, may utilize the adjacent railroad corridor and forage on site in landscaped areas. Potential roosting habitat for bat species was identified in the existing building, specifically in the roof tile cavities and other suitable crevasses, as well as in mature trees. However, no bats or their sign were identified during surveys.

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. Based on the specialized habitat requirements (e.g., vernal pools, marsh, riparian, chaparral, coastal scrub, or serpentine soils) for special-status plants potentially occurring in the region, there are no special-status plant species with the potential to occur on the project's site (CNDDB 2021; CNPS 2021). In addition, most rare, threatened, endangered, and sensitive wildlife species are not expected to occur due to a lack of suitable habitat, most notably natural habitat for pollinating bees and vernal pools, or other aquatic habitats (CNDDB 2021). No special-status plant or wildlife species were identified in the area during field surveys (DayZenLLC 2021e).

Existing mature trees, as well as lawn and barren areas, on and near the project site, provide potential nesting habitat and food sources for bird species, including ~~primarily~~ raptors (birds of prey) and other migratory birds, protected by the Migratory Bird Treaty Act of 1918 (MBTA) and sections 3503 and 3503.5 of the Fish and Game Code. Cooper's

hawk (*Accipiter cooperii*), on the California Department of Fish and Wildlife (CDFW) Watch List, potentially occurs in the project area based on the presence of mature trees. 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 such open grasslands near agricultural areas for foraging, or American peregrine falcon (*Falco peregrinus anatum*: FP), which require high-rise buildings or cliffs for nesting. Western burrowing owls (*Athene cunicularia*: SSC) are known to occur as year-round residents at the SJC, located approximately 1.75 miles east of the proposed project site (CNDDB 2020; Albion 1997). This species is not expected to occur due to a lack of suitable habitat, including a lack of herbaceous ground cover and foraging habitat as well as the absence of burrows or burrow surrogates.

Pallid bats (*Antrozous pallidus*) occur in a variety of forested and open habitats and are historically known to occur in the project vicinity. The species is most common in open, dry habitats with rocky areas for roosting. The site does not contain high-quality roosting habitat, and no known maternity colonies of this species are present on or adjacent to the project site (DayZenLLC 2021b). However, pallid bats may move through the site occasionally based on proximity to maternity colonies (DayZenLLC 2021b). The existing building consists primarily of concrete, wood, and stucco materials with mission-style stucco archways and a sloping tile roof. The existing building has the potential to provide habitat to house bat species in the roof cavities and other suitable crevasses. No evidence of bat roosts was observed during a search of the vacant building, including under roof tiles, and no structures or trees with high-quality roost sites were detected on the site.

Sensitive habitats include areas that provide habitat for rare or endangered species and include sensitive natural communities, such as oak woodlands, wetlands, waterways or vernal pools. 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 2021; CNDDB 2021). In addition, there are no waterways, wetlands, or other aquatic resources located on or adjacent to the site. San Tomas Aquinas Creek is the nearest waterway, located approximately 0.25 mile east of the site, and drains into the San Francisco Bay. Northern coastal salt marsh, located approximately 5 miles northwest, is known to support several special-status species of birds and mammals. Northern coastal salt marsh is considered a sensitive habitat by CDFW and included as a sensitive natural community in the California Natural Diversity Database (CNDDB).

Landscape Trees

Mature trees and other ornamental landscaping are present along Walsh Avenue to the northeast, along the remaining property boundaries, as well as throughout the parking and outdoor areas of the existing office building and warehouse. A certified arborist conducted a survey and provided an inventory report of the trees on the project site (DayZenLLC 2021b). There are 108 existing trees, including 3 dead trees and 3 in poor health, which consist of 12 species. (Refer to the arborist report presented as Attachment C to the Biological Resource Assessment, which is included in Appendix B of the SPPE Application) (DayZenLLC 2021b). Of these 12 species, 2 species are considered protected

under City of Santa Clara 2010-2035 General Plan (General Plan), Policy 5.10.1-P4, specifically bay laurel (*Laurus nobilis*) and coast redwood (*Sequoia sempervirens*). The four most common species include coast redwood, ash (*Fraxinus uhdei*), sweet gum (*Liquidambar styraciflua*), and tulip tree (*Liriodendron tulipifera*) (DayZenLLC 2021b).

Regulatory Background

Federal

Endangered Species Act of 1973 (16 U.S.C.A., §1530 et seq., and 50 C.F.R., part 17). The Endangered Species Act (ESA) of 1973 designates and provides for the protection of threatened and endangered plant and animal species, and their critical habitat. Under ESA, no one can "take" a federally listed species without incidental take authorization. "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.A §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 authorization may be obtained through a Section 7 consultation (between federal agencies) or a Section 10 Habitat Conservation Plan (non-federal landowners). The administering agencies are the U.S. Fish and Wildlife Service (USFWS), National Oceanic Atmospheric Administration (NOAA), and National Marine Fisheries Service (NMFS).

Migratory Bird Treaty Act of 1918 (16 U.S.C., §§ 703-712). TMBTA makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird, including nests with viable eggs). The administering agency is USFWS.

State

California Endangered Species Act (Fish and Game Code, § 2050 et seq.). The California Endangered Species Act (CESA) protects California's rare, threatened, and endangered species. CESA allows the CDFW to issue an incidental take permit for a species listed as candidate, threatened, or endangered only if that take is incidental to otherwise lawful activities and specific criteria are met. These criteria are listed in the California Code of Regulations, Title 14, section 783.4, subdivisions (a) and (b). For purposes of CESA, "take" means to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (Fish and Game 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.

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 the Fish and Game 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, except as otherwise provided by the Fish and Game Code or any regulation made pursuant thereto.
- 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 MBTA or any part of such migratory nongame birds.

Native Plant Protection (Fish and Game Code, § 1900 et seq.). ~~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.

Local

City of Santa Clara. The General Plan (adopted November 16, 2010) goals and policies that address the protection and preservation of the city's natural habitat and wildlife are described in Section 10.5, Environmental Quality (Santa Clara 2010). The administering agency is the Planning Division of the city of Santa Clara. General Plan goals and policies applicable to the proposed 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-G1 Protect fish, wildlife, and their habitats, including rare and endangered species.
- 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-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-P12 Encourage property owners and landscapers to use native plants and wildlife-compatible nonnative plants, when feasible.

Santa Clara City Code, Chapter 12.35.020. This section of the Santa Clara City Code specifies how to proceed with certain issues with trees and shrubs growing in the streets or public places (Santa Clara 2020). This includes addressing the removal, alteration, or damage to trees via trenching. Special authorization for removal or alteration of trees and shrubs growing in the streets or public places is required. The administering agency is the Streets Department in the Department of Public Works of the city of Santa Clara.

4.4.2 Environmental Impacts

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

The proposed project site is within an urbanized area and located on developed land that is surrounded by industrial development. Land cover includes an office building and warehouse as well as paved parking areas with vegetation limited to landscaping, which consists of mature trees, shrubs, and ground cover plants (DayZenLLC 2021e). The existing office and warehouse buildings would be demolished prior to construction. Shrubs and groundcover as well as 66 of the 108 trees on the site would be removed (DayZenLLC 2021bb). However, the existing trees not in conflict with proposed utilities, grading, storm water treatment facilities, and architectural improvements would be protected in place (DayZenLLC 2021bb).

Less Than Significant with Mitigation Incorporated. Rare, threatened, endangered, and sensitive plant species are not expected to occur on site because the site does not contain suitable habitat (e.g., vernal pools, marsh, riparian, chaparral, coastal scrub, or serpentine soils), excluding Cooper's hawk and pallid bat.

Existing mature trees on and near the project site provide potential habitat and food sources for bird species, including raptors and other migratory birds, protected by MBTA and sections 3503 and 3503.5 of the Fish and Game Code. Bat species, such as pallid bat, may occur occasionally on site and utilize existing landscape trees and buildings for roosting.

Nesting Birds. Tree removal associated with project implementation could result in direct destruction of active nests of protected bird and raptor species if tree removal occurs during the nesting season (generally defined as February 15 to September 15). Project construction could also result in indirect disturbance of protected nesting birds on or near the project site causing nest abandonment by the adults and mortality of chicks and eggs. The destruction of active protected bird nests, nest abandonment, and/or loss

of reproductive effort caused by disturbance are considered a "take" by CDFW, and, therefore, would be a significant impact.

Implementation of mitigation measure **BIO-1** would reduce construction impacts to a less-than-significant level because it includes requirements to schedule, if possible, construction activities involving tree removal to months outside the nesting period, to conduct nesting bird surveys prior to initiation of any type of construction activities during the nesting period, and to establish buffers to avoid disturbance of nesting birds if active nests are detected, in consultation with CDFW. 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. Demolition and tree removal associated with project implementation could result in direct destruction of active roosts of protected bats, if present. Pallid bats are considered a special-status species by CDFW and listed as a Species of Special Concern. Destruction of active special-status bat roosts and direct impacts on individual bats include injury and mortality and would be a significant impact.

Implementation of mitigation measure **BIO-2** would reduce construction impacts on special-status bats to a less-than-significant level because it includes requirements to conduct bat clearance surveys prior to demolition of the existing buildings or removal of trees and to develop a Bat Mitigation and Monitoring Plan (Plan), which details exclusion methods, roost removal procedures, and compensatory mitigation methods for permanent impacts for roost removal to be submitted to CDFW for review and approval.

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

Operation

Less Than Significant. 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. The only other operational impacts that could potentially affect biological resources are indirect impacts resulting from project-related nitrogen deposition on nitrogen-sensitive habitats.

Operation of the project's 44, 2.75-megawatt, emergency backup diesel generators would result in emissions of oxides of nitrogen (NOx). Nitrogen deposition is defined as the input of NOx and ammonia (NH3) derived pollutants, primarily nitric acid (HNO3), 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.

CEC staff considered protected areas and designated critical habitat within a 6-mile radius around the proposed project in the analysis of nitrogen deposition from the proposed project. It has been 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, 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 located in the Guadalupe Slough near the San Francisco Bay Trail, approximately 5 miles northwest of the proposed project site, is the only protected area within 6 miles of the project known to be sensitive to nitrogen deposition. This habitat occurs along 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 2021). 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 (*Reithrodontomys raviventris*; FE, SE) (CNDDB 2021).

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). CEC staff used the conservative estimate of 30-40 kg N/ha/yr as the critical load for northern coastal salt marsh.

Impacts potentially could occur if the emissions from the proposed project in conjunction with baseline nitrogen deposition levels exceeded the critical load for the community. For a baseline nitrogen deposition estimate, CEC staff used the Community Multiscale Air Quality (CMAQ) modeling system, which provides estimates of ozone, particulates, toxics, and acid deposition. CEC staff considered the most recent CMAQ-predicted value of 11.4

kg N/ha/yr from 2012 at northern coastal salt marsh habitat as the best available data to determine baseline nitrogen deposition (CMAQ 2020). CEC staff modeled the potential nitrogen deposition impacts from readiness testing and maintenance of the proposed emergency standby generators within a 2-mile radius of the project site using American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). Although the available modeling grid only extended 2 miles, it was adequate for CEC staff to estimate contributions at the salt marsh habitat within 6 miles of the proposed 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 proposed 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 paved, developed land that is surrounded by industrial development. Land cover includes office buildings and paved parking lots with vegetation limited to landscaping, which consists of mature trees, shrubs, and ground cover plants. There are no riparian habitats or other sensitive natural communities identified in local or regional plans, policies, and regulations or by CDFW or USFWS within the project site. Therefore, there would be no impact.

Operation

Less Than Significant Impact. No direct impacts would occur during operation of the proposed project. However, CEC staff also considered indirect impacts from nitrogen deposition resulting from operation of the proposed project as a potential impact on sensitive natural communities. Northern coastal salt marsh is the only sensitive natural community known to occur within 6 miles of the proposed project.

As stated previously, indirect impacts could potentially occur if emissions from the proposed project along with the baseline nitrogen deposition exceeded the critical load for the sensitive natural community. Vegetation-specific critical loads for nitrogen deposition would not be exceeded at any location with northern coastal salt marsh. Therefore, this impact would be less than significant.

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

No Impact. There are no state of federally protected wetlands within or adjacent to the project site. The closest aquatic feature to the project site is the San Tomas Aquino Creek located approximately 0.25 mile east and separated from the site by Walsh Avenue as well as light industrial development and office parks. Construction related impacts are generally limited to the site itself; therefore, there would be no impact resulting from construction or operation of the proposed project.

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. There are no established wildlife corridors, such as rivers or streams, in the immediate project vicinity. The Guadalupe River is the closest corridor where the movement or migration of native resident or migratory fish or wildlife species would likely occur. The nearest access point to the river is approximately 2 miles east of the proposed project. There are no known wildlife nursery sites, such as a rookery, fawning area, or fish spawning habitat, in the project area. There would be no impact resulting from the construction or operation of the proposed project.

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

Construction

Less Than Significant Impact with Mitigation Incorporated. As part of the project, the applicant proposes removal of 66 of the 108 trees documented as occurring on site, including removal of 3 dead trees and 3 trees in poor health (DayZenLLC 2021bb). Of the 66 trees to be removed, the 63 live trees are considered part of the urban forest under General Plan Policy 5.3.1-P10, which requires all removed trees, regardless of species, to be replaced at a minimum 2:1 ratio. No mitigation would be required for the 3 dead trees. There are 8 coastal redwood trees proposed to be removed that have a diameter greater than 36" at 48" above grade or diameter at breast height (dbh). No heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan are present (Santa Clara 2010).

The project proposes to remove protected tree species cited in General Plan Policy 5.10.1-P4, specifically coastal redwood and bay laurel trees due to conflicts with the layout. Specifically, the Revised Project Clearance Committee (PCC) Drawing Set lists 29 coastal redwoods (Trees 31-34, 36-38, 63-65, 77-80, 90, 91, 91, 92, 99-103, 105-108, and 120 – note there are two trees labeled 91) and 1 bay laurel (Tree 116) (DayZenLLC 2021z) that are proposed to be removed based on conflicts with the layout. The city expects an applicant to retain protected trees on site, if feasible, where they would not conflict with building or required parking placement (CEC 2021q). These protected trees are all located in areas that would conflict with proposed utilities, grading, storm water treatment facilities, or architectural improvements. Therefore, there would be no conflict with General Plan Policy 5.10.1-P4 resulting from removal of these 30 trees.

Conflicts with local policies or ordinances protecting biological resources, such as a tree preservation policy or an ordinance or tree replacement policies (for example, General Plan Policies 5.10.1-P4 and 5.3.1-P10) would be a significant impact. General Plan Policy 5.3.1-P10 also calls for new development to provide street trees and conflicts with this part of the policy would also be a significant impact. The project applicant is proposing replacement of the 66 trees to be removed with adequate trees at 24" box size or 36" box size to be planted on site or offsite, as necessary. The city would apply specific conditions of Architectural Review approval calling for a tree replacement at a minimum of 2:1 at 24 -inch box size or 1.5:1 at 36-inch box size and protection of trees to be retained according to the approved landscape plan (Note – this ratio is incorrect in the ROC where it is listed as 1:1.5) (CEC 2021q). Depending on the tree species and size, standard replacement ratios may not be adequate, especially for the large (>36 inches dbh) coastal redwoods that are proposed for removal. Additional mitigation beyond the standard replacement ratios may be required. Final mitigation ratios and the number and placement of trees designated as street trees would be part of approval of the final design package and would be finalized prior to issuance of grading and/or building permits from the city (CEC 2021q). The remaining trees to be retained would require fencing to establish tree-protection zones to ensure the trees are not damaged during demolition or construction. In addition, the project applicant would be required to implement standard protection measures, such as those included in the city of Santa Clara Arborist Notes included in the Revised PCC drawing set, or as updated as part of approval by the city of Santa Clara.

The tree species proposed to be planted as replacement trees are included in the proposed Landscape Planting Plan and include a mix of native and ornamental species (DayZenLLC 2021z). New landscaping is proposed to be planted around the boundaries of the site and building perimeter, storm water treatment facilities, and landscape beds within the parking areas (DayZenLLC 2021bb). The Landscape Planting Plan would be part of the final design package subject to review and approval by the city Community Development Department and would be finalized prior to issuance of grading and/or building permits from the city of Santa Clara (CEC 2021q).

Implementation of mitigation measures **BIO-3** and **BIO-4** would reduce construction impacts on trees covered by General Plan Policies 5.10.1-P4 and 5.3.1-P10 to a less-than-significant level because these measures include requirements for the project applicant to implement tree protection measures included as part of approval of the final design package by the city Community Development Department. In addition, the applicant would be required to provide adequate replacement trees for impacts related to tree removal. This also is part of the approval of the final design package by the city Community Development Department and includes implementation of tree protection measures included on the approved landscape plans for the project. Proposed measures are included on the city of Santa Clara Arborist Notes included in CA3 PCC Drawing Set (DayZenLLC 2021z). Standard tree protection measures include, but are not limited to, the establishment of Tree Protection Zones (TPZs), measures to avoid impacts during boring and trenching near tree roots, measures to avoid impacts during grading near trees, and measures to take prior to cutting any tree limbs or roots.

Implementation of **BIO-3** and **BIO-4** would ensure implementation of the proposed project would not conflict with tree preservation policies and tree replacement policies. Therefore, construction of the project would not have a substantial adverse effect on biological resources protected by local policies or ordinances.

Operation

No Impact. Tree removal or other activities that conflict with any local policies or ordinances protecting biological resources are not proposed to occur during operation of the project. Therefore, no impact would occur.

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 adopted 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 proposed project is not within the permitting area of this plan (SCVHA 2020). Therefore, there would be no impact during construction or operation of the proposed project.

4.4.3 Mitigation Measures

CEC staff ~~reviewed the applicant's "project design measures" and~~ incorporated ~~their proposed measures, as appropriate, in~~ the following mitigation measures to reduce impacts to biological resources to less than significant.

BIO-1 Avoid and Minimize Impacts to Protected Bird Species

- If possible, demolition and construction activities, including removal of trees and vegetation clearing, shall take place between September and January. If demolition or construction activities, including removal of the trees on –site, would take place between January and September, a pre-construction survey for nesting raptors and other protected native or migratory birds shall be conducted by a qualified ornithologist, approved by the city of Santa Clara, to identify active nests that may be disturbed during project implementation. Pre-construction surveys shall be conducted no more than 14 days prior to the initiation of demolition or construction activities or tree relocation or removal. Surveys shall be repeated if project activities are suspended or delayed for more than 14 days during the nesting season. The surveying ornithologist shall inspect all trees in and immediately adjacent to the construction area to be disturbed by these activities, and the ornithologist shall, in consultation with the California Department of Fish and Wildlife (CDFW), designate a construction-free buffer zone (typically 250 feet for non-raptors to 500 feet for raptors) around the nest until the end of the nesting activity. Any changes to a buffer zone must be approved by the city of Santa Clara, in consultation with CDFW. The nests and buffers will be field checked weekly by the approved ornithologist. The approved buffer zone will be marked in the field with exclusion fencing, within which no construction, tree removal, or vegetation clearing shall commence until the ornithologist verifies that the nest(s) are no longer active. 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~~a~~ tree removal, demolition, or grading.~~l permit by the city arborist.~~ 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 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 within 0.25 mile 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 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 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 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 above bullet) and monitoring to assess bat use of mitigation areas. This Plan shall be submitted to CDFW for review.

BIO-3 Tree Removal ~~Permit~~

The project applicant shall obtain approval by the City's Department of Comnmunity Development ~~the appropriate tree removal permits from the city of Santa Clara~~ for all ~~removal of all healthy mature trees~~ trees to be removed. Acquisition of this permit shall include details of the final mitigation numbers. The Ccity of Santa Clara's Tree Ordinance (SCCC 12.35.090(C)(7)~~landscape ordinance~~ mandates ~~a 2:1~~ replacement ratio and size of tree species for planting. ~~with 24-inch box size trees, or 1.5:1 replacement with 36-in box size trees.~~ Depending on the species and size of the tree, additional mitigation may be required by the city of Santa Clara. The project proposes to mitigate for the loss of 66 trees through a combination of 24-inch box size and 36-inch box size.

BIO-4 Trees to Remain: Avoidance and Minimization of Impacts

The project applicant shall follow the tree protection measures for trees that are to remain in place, as included as specific conditions by the city of Santa Clara as part of Architectural Review approval and included on the approved landscape plans for the project.

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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 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?	☐	☒	☐	☐

TRIBAL CULTURAL RESOURCES 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:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. 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	☐	☐	☐	☒
b. 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.	☐	☒	☐	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

4.5.1 Environmental Setting

This section considers four broad classes of cultural resources: prehistoric, 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:

- *Prehistoric, 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 prehistoric, ethnographic, and historic contexts
- *Results* ensuing from those methods—identifies the specific resources present or expectable 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 the 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

Prehistoric archaeological resources are those materials relating to Native American occupation and the 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, the prehistoric period began more than 12,000 years ago and extended through the 18th century until A.D. 1769, when Europeans first settled in 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 resources 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 recently introduced into CEQA by Assembly Bill 52 (Chapter 532 , Stats. 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 prehistoric, ethnographic, or historic.

Prehistoric 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 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 circa (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 even 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 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 are similar to 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 (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 shellmound 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 together 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 that provide that context, 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 (Santa Clara County 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'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 exist (Santa Clara County 2012, page 32).

American Period (1848 to Present)

California became the thirty-first 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 20th 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 the 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 (SFSJRR) 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, and 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 the Santa Clara Valley in the first third of the 20th 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-based economy and its support operations were gradually displaced by expanding suburban development, light industrial, and high-tech research and development 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 research and development 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.

Project Site

The project site is in the city of Santa Clara, Santa Clara County, California. The site encompasses approximately 6.69 acres and is located at 2590 Walsh Avenue in Santa Clara, California, Assessor's Parcel Number (APN) 216-28-112. 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 (Ngo and DePietro 2021, page 3). It is located 3.54 miles south of the San Francisco Bay (TRC 2020, page 5).

The parcel is irregularly shaped and is generally bound to the northwest by a microelectronics testing facility, to the northeast by a software research and development facility, to the south by a railroad line operated by Caltrain, to the east by Walsh Avenue, and to the west by a Silicon Valley Power (SVP) substation. The Vantage Santa Clara Data Center Campus CA1 is located to the east of the site across Walsh Avenue. The closest residential uses are to the south across the railroad ROW (Ngo and DePietro 2021, page 3). The current building on site dates to ca. 1980 to 1982 (Smart Permit 2021; TRC 2020, page 4).

The project site served as farmland from at least 1897 to the 1970s (Ngo and DePietro 2021, pages 17–18). Maps and aerial images indicate that from 1939 to 1968 there existed private residences, agricultural structures, and orchards. A creek historically bisected the project site. The 1953 USGS topographic map labels the creek bisecting the property as Saratoga Creek. Saratoga Creek has had a few names over the years: Campbell's Creek, Sanjon Creek, and Quito Creek. The name was changed to Saratoga Creek sometime after the conclusion of WWII and by 1951 (Hickman 1974, page 11). South 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 still bisecting the project property sometime between 1974 and 1982 (TRC 2020). Both creeks' origins are in the foothills of the South Coast Ranges. Throughout the early 19th century, most creeks originating in the foothills did not maintain a defined channel from the hills to the San Francisco Bay, including San Tomas Aquino Creek and Saratoga Creek (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 1970s (TRC 2020). By 1974, the property had been cleared of all residences and agricultural uses. The parcel was developed as an industrial property in 1982. Maps and aerial images indicate similar histories on some of the adjacent properties. The existing Caltrain rail alignment to the south dates to 1864 (JRP 2002, page 10), and is identified as the SPRR Monterey Line on topographic maps (TRC 2020, pages 13–16, and 1130 of 1213).

The adjacent parcels are listed in Table 4.5-1 below.

Table 4.5-1 Parcels Adjacent to the Project Site

Address	APN	Description	Year Constructed
2590 Walsh Ave	216-28-112	Project Site, Industrial	ca. 1980–1982
2550 Walsh Ave	216-28-113	Commercial/Office	1980
2565 Walsh Ave/2820 Northwestern Parkway	216-28-132	Commercial/Industrial	unknown
2630 Walsh Ave	216-28-106	Commercial/Office	1977
2705 Bowers Ave	216-28-062	Uranium Substation	1976
N/A	216-28-121	Railroad tracks (SPRR, Caltrain)	1864

Abbreviations: APN = Assessor's Parcel Number; Ave = Avenue; N/A = not applicable; SPRR = Southern Pacific Railroad

The pedestrian survey completed on March 18, 2021, by the applicant's consultants (First Carbon Solutions) did not identify any adjacent properties 45 years or older (DayZenLLC 2021e, page 4-46). However, city of Santa Clara building permit records indicate that the Uranium Substation was issued a permit to construct in 1974 and was finished in 1976, making it at least 45 years old (Smart Permit 2021). The route of the SPRR Monterey Line dates to 1864, when it was initially constructed as the San Francisco & San Jose Railroad. The applicant's consultant prepared a supplemental report at CEC staff's request to investigate properties within one parcel distance from the project site. Both the Uranium Substation and the railroad tracks were determined to be 45 years or older and were evaluated for their eligibility for the National Register of Historic Places (NRHP), CRHR, and the local city of Santa Clara register (Murray 2021). Methods and results are below.

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 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 discontiguous areas where the project could arguably affect cultural or tribal cultural resources.

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.

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 sites, areas slated for concrete and hardscape removal, areas to be filled and graded, staging and laydown areas, installation of underground utilities, subsurface drainage, and installation of two transmission line poles. The applicant proposes demolition and excavation to variable depths. Trench excavations would extend up to 15-feet below grade. Foundation piles for the data center buildings would be augered to depths more than 30-feet below grade. (DayZenLLC 2021e, page 4-67.) Transmission line poles would be installed via truck-mounted auger to a depth of 20–30 feet.

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. Staff, therefore, treats the ethnographic component of the PAA as coterminous with the archaeological component.

The project site consists primarily of a pre-existing industrial one-story building, pavement, hardscape, and modest landscape elements, much of which dates to 1980 to 1982. The historic built environment PAA for this project includes the project site and properties within a one-parcel boundary of the project site. This includes all properties directly across Walsh Avenue from the project site.

Literature Review

The literature review for this analysis consisted of a records search at the California Historical Resources Information System (CHRIS), a review of the application for small power plant exemption (SPPE), and an 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 CHRIS on May 5, 2021 (Ngo and DePietro 2021, page 1). The NWIC is the State of California's official repository of cultural resources records, previous cultural resources studies, and historical information concerning cultural resources for 16 counties, including Santa Clara County. The records search area included the project site and a 0.5-mile buffer around it (Ngo and DePietro 2021, page 1).

CEC staff also examined historic maps and aerial photographs of the PAA and vicinity to identify cultural resources (EDR 2017a, 2017b; Edward Denny & Co. 1913; GLO 1866; TRC 2020; USGS 1897, 1899). These sources depict the historic appearance of the PAA each decade from 1857 through 1980 (excepting 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, CEC staff consulted:

- City of Santa Clara's General Plan 2010–2035 (General Plan), including its Historic Preservation and Resource Inventory (Santa Clara 2010)
- County of Santa Clara Historic Context Statement (Santa Clara County 2012)
- City of Santa Clara's Map Santa Clara tool (Santa Clara 2021).

CEC staff also consulted the 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 February 23, and May 5, 2021, to request a list of tribes that might be interested in the project and a search of the Sacred Lands File. The NAHC responded on March 9, and May 21, 2021, providing contact information for 10 representatives of California Native American tribes. These individuals represent:

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

The applicant sent letters to these tribes on March 10, and May 21, 2021. (Ngo and DePietro 2021, page 21; DayZenLLC 2021e, page 4-46.)

CEC Consultation

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 Wuksache Indian Tribe/Eshom Valley Band, a California Native American tribe that has traditional and cultural affiliation with the geographic area of the proposed project (Woodrow 2016). Accordingly, the CEC's Tribal Liaison mailed a letter (dated July 1, 2021) to the Wuksache 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. The letter included four figures illustrating the proposed project and its location. (CEC and NAHC 2021, PDF pages 48–55.)

Consistent with the CEC's tribal consultation policy (CEC 2017), CEC staff contacted the NAHC on April 14, 2021, 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 April 28, 2021, and provided a list of nine California Native American tribes to contact (CEC and NAHC 2021, PDF pages 2–3); the listed tribes were the same tribes that the applicant's consultant contacted in March 2021. CEC staff mailed initial consultation letters to these tribes on July 1, 2021 (See CEC and NAHC 2021, PDF pages 4–47). See the following subsection, "Results," for tribal responses and lead agency follow-up.

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 September 17, 2021 (see the discussion under "Results").

Archaeological Survey

An archaeologist and a historian from FirstCarbon Solutions conducted an archaeological survey of the project site on March 18, 2021. Where obstructions did not hinder traversing the project site, FirstCarbon Solutions surveyed by walking transects at 5-meter (16-foot) intervals and making observations concerning the ground surface. The surveyors examined all available soil exposures in the project site. (DayZenLLC 2021e, page 4-45.)

Historic Architectural Survey

CEC cultural resources 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 1976 or earlier, or potentially eligible for the CRHR or local register, was surveyed and evaluated by the applicant's consultant for potential significance (Murray 2021).

Results

Literature Review Results

The NWIC records search identified six previous cultural resources studies conducted within the project site (BioSystems 1989; Carrico et al. 2000; Holson et al. 2002; Jurich and Grady 2011; Nelson et al. 2000; SWCA 2006). Eleven previous cultural resources studies have been conducted within 0.5 mile of the proposed project (Anastasio and Garaventa 1988; Baker 1998; Basin 2009a, 2009b; Busby 1999; Flynn 1979; Hammerle 2015; Hickman 1974; Jones & Stokes 2001; JRP 2002; Nelson et al. 2002). The city of Santa Clara's Planning website documents additional cultural resources impact analyses within 0.5 mile of the proposed project (Akmenkalns 2020; Guldenbrein 2017; Psota 2016).

The NWIC has no records of previously recorded cultural resources within 0.5 mile of the project site (Ngo and DePietro 2021, page 19). However, the adjacent 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). These cultural resources are listed in **Table 4.5-2**.

TABLE 4.5-2. CULTURAL RESOURCES IDENTIFIED IN THE LITERATURE REVIEW

No.	Resource Name	APN	Description, Year Built	Eligibility Status
1.	San Tomas Aquino Creek		Channelized water conveyance structure, 1897	Ineligible
2.	Caltrain/SPRR Tracks (P-43-000928)	216-28-121	1864	Ineligible

Notes: APN = Assessor's Parcel Number; SPRR = Southern Pacific Railroad

Tribal Consultation Results

The April 28, 2021, search of the Sacred Lands File did not identify Native American cultural resources in the search area (CEC and NAHC 2021, PDF pages 2–3). The applicant did not receive any responses to letters sent to these tribes.

The Wuksache 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 with California Native American tribes, the Tamien Nation responded by letter on August 6, 2021, specifically requesting consultation 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 we 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. Consultation between the CEC and Tamien Nation is ongoing as of the time of this writing; CEC staff will update this results discussion in the final environmental impact report after the consultation concludes.

Archaeological Survey Results

FirstCarbon Solutions found the archaeological PAA to be almost completely covered in pavement, hardscape, buildings, and landscaping. Landscaping offered minimal opportunity to see the ground surface in the archaeological PAA. The surveyors did not identify any archaeological resources in the archaeological PAA.

Historic Architectural Survey Results

The built environment PAA used for this project includes properties within a one-parcel boundary of the project site. 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 did not identify any

properties containing buildings or structures 45 years or older within the PAA. CEC staff identified two historic-era resources 45 years or older within the PAA. A subsequent investigation by the applicant's consultant concurred with staff's conclusion (Murray 2021). The two resources 45 years or older are the Caltrain Railroad Tracks (historic SPRR Monterey Line) and the SVP Uranium Substation. Both resources have been surveyed and evaluated by the applicant's consultant (Murray 2021).

Caltrain Railroad Tracks (Historic SPRR Monterey Line, P-43-000928)

The railroad predates the commercial and industrial operations in the area. The Caltrain electrification project has produced numerous studies over time of the Caltrain rail corridor and associated infrastructure. Most of these studies have been prepared by JRP Historical Consulting (JRP) (for example, JRP 2002). Generally, JRP and others have found modern railroad segments do not retain their integrity to the period of significance. Integrity has seven aspects: design, setting, materials, workmanship, feeling, association, and location. While the location of the railroad line has not changed, most railroads undergo maintenance and upgrades of facilities that generally change the design, materials, and workmanship over time. This railroad does not appear to retain sufficient integrity to its setting, feeling, and association during the period of significance, 1860 to 1873, when SFSJRR and SPRR first operated the passenger and freight line. For the segment adjacent to the project site, the addition of a second track in the early 1900s, replacement of the original rails in the late 1950s, the grade separation at Bowers Avenue, and the addition of electrification equipment in the last decade (Murray 2021, Attachment A) degrade the integrity of the resource. The railroad has changed from its initial use as a passenger and freight line from San Francisco to Monterey and Los Angeles to strictly passenger commuter service on the San Francisco Peninsula, from San Francisco to Gilroy. The lack of integrity to the period of significance makes it ineligible for listing under the NRHP, CRHR, or city of Santa Clara's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

Uranium Substation

The SVP Uranium Substation was constructed between 1974 and 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 is comprised of 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 (Murray 2021, Attachment A). 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 (Murray 2021, Attachment A). The Uranium Substation has no significant historical or architectural associations (Murray 2021, page 11). This lack of

historical or architectural significance makes it ineligible for listing under the NRHP, CRHR, or city of Santa Clara's significance criteria. Thus, the resource does not qualify as a historical resource under CEQA.

2590 Walsh Avenue

The building located at 2590 Walsh Avenue dates to the early 1980s. It is best described as a single-story office and warehouse structure, designed with a nod to the Spanish Eclectic style of architecture. This is found in the clay tile roof and the predominant arched windows. There is a nearly identical building next door at 2630 Walsh Avenue. The project site is completely developed, consisting of the large office warehouse building bordering Walsh Avenue to the north and parking lots, associated infrastructure, and landscape elements. None of the structures or elements on the project site are 45 years or older in age, and thus, are ineligible for inclusion on the CRHR or the city of Santa Clara's register and do not warrant further consideration as potential historic resources 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; Mission College 2019, pages 92–93; Hylkema 1998, page 20). Researchers have identified at least 16 buried prehistoric archaeological sites in the Santa Clara Valley (Rehor and Kubal 2014, page 4-1, Table 4-1). Archaeologists working independently of the present analysis have estimated the PAA's likelihood to contain buried, prehistoric, archaeological resources as moderate (Byrd et al. 2017, Figure 27). The PAA is situated in an area that historically lay near J. Kiefer's barn and house, orchards, natural and channelized forms of present-day Saratoga Creek, roads, and encompassed a residence and part of an adjoining orchard since the middle of the 1800s to about 1968 or 1974. Therefore, buried historic archaeological resources are also expectable in the PAA, below modern construction. (DayZenLLC 2021c; GLO 1866; USGS 1899.)

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 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), respectively, 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. Section 5.6.3 of the city 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 the 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 City 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 the maintenance of a Historic Resource Inventory.

Appendix 8.9 of the General Plan also identifies significance criteria for local listings. The city of Santa Clara's 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

Cultural Resources CEQA Checklist Questions

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, prehistoric archaeological resources as moderate (Byrd et al. 2017, Figure 27).

The ground disturbance required to build the proposed project would extend into native soils more than 30 feet below grade. Known buried archaeological sites in the 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.

This EIR, however, proposes a mitigation measure, **CUL-1**, to reduce the significance of any such impacts on historical resources. **CUL-1** requires qualified professionals to survey the exposed ground surface for cultural resources once the demolition of existing structures is complete. It also requires test excavation to determine the presence or absence of buried cultural resources and describes criteria for avoidance measures and construction monitoring (see **Section 4.5.3: Mitigation Measures**). This measure would reduce impacts to any discovered historical resources to a less-than-significant level.

Operation

No Impact. Ground-disturbing activities are not part of the operational or maintenance profile of the proposed project. Therefore, there would be no impact to historical resources, as described 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 the potential construction impacts for CEQA Checklist Question "a" above, mitigation measure **CUL-1** would reduce impacts to unique archaeological resources to a less-than-significant level.

Operation

No Impact. Ground-disturbing activities are not part of the operational or maintenance profile of the proposed project. The 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 described 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. See staff's response to CEQA Checklist Questions "a" and "b" above for construction. In addition to mitigation measure **CUL-1**, mitigation measure **CUL-2** describes a protocol to minimize or avoid impacts on inadvertently discovered human remains. Combined, mitigation measures **CUL-1** and **CUL-2** would reduce the impacts to human remains to a less-than-significant level.

Operation

No Impact. Ground-disturbing activities are not part of the operational or maintenance profile of the proposed project. Therefore, there would be no impact to human remains during the operation and maintenance of the proposed project.

Tribal Cultural Resources CEQA Checklist Questions

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. 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, and, 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.

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code, section 5024.1 (c). In applying the criteria set forth in Public Resources Code, section 5024.1 (c), 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 prehistoric 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 **CUL-1** and **CUL-2** would reduce the impacts on buried, tribal cultural resources to a less than significant level (see Cultural Resources CEQA Checklist Questions "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: The following project-specific measures would be implemented during construction to avoid significant impacts to unknown subsurface cultural resources:

- A Secretary of the Interior-qualified archaeologist and a Native American cultural resources monitor shall be on site to monitor all ground-disturbing activity, including the removal of foundations and landscaping, on the project site. The project applicant shall submit the name and qualifications of the selected archaeologist and Native American monitor, along with a signed letter of commitment or agreement to monitor, to the City's Director of Community Development prior to the issuance of a grading permit. Preference in selecting Native American monitors shall be given to Native Americans with:
  - Aboriginal, culturally affiliated ties to the area being monitored.
  - Knowledge of local historic and prehistoric Native American village sites.
  - Knowledge and understanding of Health and Safety Code, section 7050.5, and Public Resources Code, section 5097.9 et seq.
  - Ability to effectively communicate the requirements of Health and Safety Code, section 7050.5, and Public Resources Code, section 5097.9 et seq.

- Ability to work with law enforcement officials and the Native American Heritage Commission to ensure the return of all associated grave goods taken from a Native American grave during excavation.
- Ability to travel to project sites within traditional tribal territory.
- Knowledge and understanding of ~~Title 14~~, California Code of Regulations, ~~Section~~ title 14, section 15064.5.
- Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding of CEQA mitigation provisions.
- Ability to read a topographical map and be able to locate site and reburial locations for future inclusions in the Native American Heritage Commission's Sacred Lands Inventory.
- Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.

After the removal of pavement and prior to grading, the archaeologist shall conduct a pedestrian survey over the exposed soils to determine if any surface archaeological manifestations are present.

- After the demolition of the existing building and paved parking lot on the site, a qualified archaeologist with a ~~n~~Native American monitor present shall complete mechanical presence/absence testing for archaeological deposits and cultural materials. In the event any prehistoric site indicators are discovered, additional backhoe testing will be conducted to map the aerial extent and depth below the surface of the deposits. In the event prehistoric or historic archaeological deposits are found during presence/absence testing, the significance of the find will be determined. If deemed significant, a treatment plan will be prepared and provided to the city's Director of Community Development. Where Native American cultural materials are identified, the archaeological monitor will prepare a treatment plan in collaboration with the monitoring California Native American tribe. The key elements of a treatment plan shall include the following:
  - Identify the scope of work and range of subsurface effects (include location map and development plan),
  - Describe the environmental setting (past and present) and the historic/prehistoric background of the parcel (potential range of what might be found),
  - Develop research questions and goals to be addressed by the investigation (what is significant vs. what is redundant information),
  - Detail the field strategy used to record, recover, or avoid the finds (photos, drawings, written records, provenience data maps, soil profiles, excavation techniques, standard archaeological methods) and address research goals.
  - Analytical methods (radiocarbon dating, obsidian studies, bone studies, historic artifacts studies [list categories and methods], packaging methods for artifacts,

etc.); the monitoring California Native American tribe shall determine the appropriateness of analytical methods proposed for Native American cultural materials,

- Report structure, including a technical and layperson's report and an outline of document contents in one year of completion of development (provide a draft for review before a final report),
- Disposition of the artifacts (the monitoring California Native American tribe will determine the disposition of California Native American cultural materials),
- Appendices: site records, update site records, correspondence, consultation with Native Americans, etc.

The archaeologist and California Native American monitor will monitor full-time all grading and ground disturbing activities associated with the construction of the proposed project. If the archaeologist and Native American monitor believe that a reduction in monitoring activities is prudent, then a letter report detailing the rationale for making such a reduction and summarizing the monitoring results shall be provided to the city's Director of Community Development. Department of Recreation 523 forms shall be submitted along with the report for any cultural resources encountered over 50 years old.

- If prehistoric or historic resources are encountered during on-site construction activities, all activity within a 50-foot radius of the find shall be stopped, the city's Director of Community Development shall be notified, and a Secretary of the Interior-qualified archaeologist shall examine the find and record the site, including field notes, measurements, and photography for a Department of Parks and Recreation 523 Primary Record form. The archaeologist shall make a recommendation in collaboration with the monitoring California Native American tribe regarding eligibility for the California Register of Historical Resources, data recovery, curation, or other appropriate mitigation. Ground-disturbance within the 50-foot radius can resume once these steps are taken and the city's Director of Community Development has concurred with the recommendations. Within 30 days of the completion of the construction or cultural resources monitoring, whichever comes first, a report of findings documenting any cultural resource finds, recommendations, data recovery efforts, and other pertinent information gleaned during cultural resources monitoring shall then be submitted to the city's Director of Community Development under confidential cover, along with a report that redacts the location(s) of all cultural resources. Once finalized, this report shall be submitted to the Northwest Information Center at Sonoma State University.
- Prior to and for the duration of ground-disturbance, the project owner shall provide Worker Environmental Awareness Program training to all existing and any new employees. This training should include: a discussion of the applicable laws and penalties under the laws; samples or visual aids of the 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 Worker Environmental Awareness Program.

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

- If human remains are discovered during the presence/absence testing or excavation and/or grading of 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 NAHC immediately. Once NAHC identifies the most likely descendants, the descendants will make recommendations regarding proper burial, which will be implemented in accordance with the California Code of Regulations, ~~Title~~ title 14, section 15064.5(e) of the CEQA Guidelines. All actions taken under this mitigation measure shall comply with the Health and Safety Code, section 7050.5(b).

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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[1].

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 G.

4.6.1 Environmental Setting

The project would consist of a four-story building, utility substation, generator equipment yard, surface parking and landscaping, recycled water pipeline and a total of 44 diesel-fired emergency backup generators (gensets). Forty 2.75-megawatt (MW) gensets (of which eight gensets would be redundant) would be used to provide backup power to support an uninterruptible power supply exclusively for the project (DayZenLLC 2021a, Section 2.1). The remaining four gensets of the same capacity (two of which are redundant) would support house functions primarily for critical cooling equipment, other general building (administration), and life safety services. The gensets, delivering a reliability factor of 99.999 percent, 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 44 gensets would each be a Caterpillar Model 3516E (Tier 4 compliant) with a peak rated output capacity of 2.75 MW and a continuous, steady-state output capacity of 2.2 MW, and fuel consumption rate of 191.8 gallons per hour (gal/hr) at full load (DayZenLLC 2021e, Section 4.6.3.1). Staff has verified the output capacity and rate of fuel consumption of these gensets from their product sheets (Caterpillar 2021). The maximum electrical load requirement of the data center would be 96 MW, which includes the electrical power load of the Information Technology (IT) servers, the cooling load of the

1 This section includes staff's analysis of the project's potential impact on Energy Resources, as required by Public Resources Code section 25541 when considering a Small Power Plant Exemption

data center buildings, 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 2019 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 (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 Silicon Valley Power (SVP) program, which would be the primary source of energy supply for the project. The bill also requires the Public Utilities Commission, 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's Climate Action Plan (CAP) was adopted on December 3, 2013, and 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 enery 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. 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.

Under AQ-1, 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**). 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, 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 (DayZenLLC 2021e, Section 4.6.3.1). Diversion saves energy by reusing and recycling materials for other uses (instead of landfilling materials and using additional non-renewable 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 (DayZenLLC 2021e, Section 4.6.3). At this rate, the total quantities of diesel fuel used for all the gensets operating at full load would be approximately 10,047 barrels per year (bbl/yr)[2]. California has a diesel fuel supply of approximately 316,441,000 bbl/yr.[3] The project's use of fuel constitutes a small fraction (less than 0.003 percent) of available resources, and the supply is more than sufficient to meet necessary demand. For these reasons, the project's use of fuel is 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 utilities 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 80 percent capacity (DayZenLLC 2021a, Section 2.2.4.1). 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 CA3DC, 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 the recent years (between 2001 and 2020), energy

2 Calculated as: (191.8 gal/hr x 50 hours per year x 44 generators) = 421,960 gallons per year = 10,047 bbl/yr.

3 This is the sum of the annual production of 114,267,000 bbl and available stocks of 202,174,000 bbl obtained from the Energy Commission's Weekly Fuels Watch Report for 2020 (latest annual report available).

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 Caterpillar 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 means that the data center must draw two 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 1.45, and its annual average PUE would be 1.26 (DayZenLLC 2021a, Section 2.2.3.2). The project's peak operation PUE estimate is based on design assumptions and represents worst case; that is, the hottest day with all server bays occupied and all servers operating at 100 percent capacity.

Additionally, rack power rating is an indicator of the server rack's power density. The lower the value the higher the power density and the more information it processes per unit of electricity consumed, resulting in a more efficient use of energy.

Measure 2.3 of the city's CAP encourages the completion of a feasibility study of energy efficient practices for new data center projects with an average rack power rating[4] of 15 kilowatts or more to achieve a PUE of 1.2 or lower. The project would have an average rack power rating of 8.3 kW, which is below the city's CAP suggestion that a feasibility study be performed (DayZenLLC 2021a, Section 2.3.1). The project's low rack power rating shows that it would use energy efficiently.

The project would be constructed in accordance with the 2019 California Green Building Standards Code and would include green building measures to reduce energy consumption (SV1 2020a, Table 2.3-1). Examples of these measures include:

- Utilizing lighting control to reduce energy usage; and
- Air economization[5] 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. 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 eligible renewable resources by 2030 (SVP 2018). SVP's 2019 non-residential power mix was composed of approximately 39 percent eligible renewable, 28 percent large hydroelectric, 23 percent nonrenewable, and 10 percent unspecified sources of power (SVP 2021). In addition, SVP offers large customers, such as CA3, renewable energy as part of their Large Customer Renewable Energy (LCRE) program. The program offers customers 100 percent carbon-free renewable electricity.

Under **GHG-3**, the applicant would be required 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 ~~carbon removal offsets~~ renewable energy credits that accomplish the same goals of 100 percent carbon-free electricity (see Section 4.8 Greenhouse Gas Emissions)."

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

5 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.

The project would receive electricity from SVP sources either through the LCRE program or through a standard electricity product supplemented by the project's purchase of carbon removal offsets. SVP is currently in compliance with SB 100 and can accommodate the electricity demand from this project while continuing compliance with the SB 100 requirements (CEC 2021).

As electricity demand from SVP increase, SVP would continue to procure additional capacity by adding new (or new to SVP) resource facilities and contracts to supplement the existing facilities, and to accommodate electricity demand growth. Under LCRE, the additional need above renewable resources would be met with 100 percent renewables.

Therefore, the project will not obstruct SVP's compliance with a state plan for renewable energy.

Given the project's gensets would operate only during routine testing and maintenance, which is limited to 50 hours per genset annually, and in the case of emergencies, and that the generated electricity would only serve the project and not the wider electric grid, the project's use of diesel fuel would not obstruct or inhibit the state from achieving these energy-related goals. Additionally, it is likely that renewable fuels could be broadly available in the future for these generator models (i.e., renewable diesel) should requirements or incentives be put in place for these types of facilities to transition to more renewable sources of fuel. See **Section 5 Alternatives** for more discussion.

The project would participate in the city's Construction & Demolition Debris Recycling Program and implement measures to promote walking, bicycling, and transit use, thereby reducing motor vehicle use. Through the city's design review process, the project would be required to comply with the California Green Building Standards Code and the city's General Plan land use policies related to energy, which are consistent with the EPA's Energy Star and Fuel Efficiency program.

Through energy efficient design and increased renewable electricity use from its primary electricity source of SVP, the project would neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency, and, therefore, would have no impact on them.

4.6.3 Mitigation Measures

None.

4.6.4 References

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4.7 Geology and Soils

This section describes the environmental and regulatory setting and discusses impacts associated with the demolition, 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 (2010), 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 wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

*Geology and Soils question (d) reflects the 2013 California Building Code (CBC), effective January 1, 2014, which is based on the International Building Code (2009).
Environmental checklist established by CEQA Guidelines, Appendix G.

4.7.1 Setting

Analysis of existing data included reviews of publicly available literature, maps, air photos, and documents presented with the application. The geologic map review of the project area included maps published by the U.S. Geological Survey (Helley and Wesling 1989; Wesling and Helley 1989, and Helley et al. 1994).). The literature reviewed included published and unpublished scientific papers. A paleontological record search of the University of California Museum of Paleontology, Berkeley online paleontological database was conducted for the disturbed project areas, including a 10-mile buffer zone surrounding the proposed data center (UCMP 2021).

Paleontological Sensitivity

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.

The potential for paleontological resources to occur in the project area was evaluated using the federal Potential Fossil Yield Classification (PFYC) system developed by the Bureau of Land Management (BLM 2016). Because of its demonstrated usefulness as a resource management tool, the PFYC has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource management tool that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential) or Unknown. This system is intended to aid in predicting, assessing, and mitigating impacts to paleontological resources. The PFYC ranking system is summarized in **Table 4.7-1**.

TABLE 4.7-1: POTENTIAL FOSSIL YIELD CLASSIFICATION

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
1 Very Low Potential	Geologic units are not likely to contain recognizable paleontological resources.
	Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units.
	Units are Precambrian in age.
	Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.
2 Low	Geologic units are not likely to contain paleontological resources.
	Field surveys have verified that significant paleontological resources are not present or are very rare.
	Units are generally younger than 10,000 years before present.
	Recent aeolian deposits.
	Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely
	Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.

TABLE 4.7-1: POTENTIAL FOSSIL YIELD CLASSIFICATION	
BLM PFYC Designation	**Assignment Criteria Guidelines and Management Summary**
3 Moderate Potential	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
	Marine in origin with sporadic known occurrences of paleontological resources.
	Paleontological resources may occur intermittently, but these occurrences are widely scattered.
	The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.
	Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in a proposed action and whether the action could affect the paleontological resources.
4 High Potential	Geologic units that are known to contain a high occurrence of paleontological resources.
	Significant paleontological resources have been documented but may vary in occurrence and predictability.
	Surface-disturbing activities may adversely affect paleontological resources.
	Rare or uncommon fossils, including invertebrate (such as soft body preservation) or unusual plant fossils, may be present.
	Illegal collecting activities may impact some areas.
	Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot- checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary.
5 Very High Potential	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
	Significant paleontological resources have been documented and occur consistently.
	Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.
	Unit is frequently the focus of illegal collecting activities.
	Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.
U Unknown	Geologic units that cannot receive an informed PFYC assignment.
	Geological units may exhibit features or preservation conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known.
	Geologic units represented on a map are based on lithologic character or basis of origin but have not been studied in detail.
	Scientific literature does not exist or does not reveal the nature of paleontological resources.
	Reports of paleontological resources are anecdotal or have not been verified.

TABLE 4.7-1: POTENTIAL FOSSIL YIELD CLASSIFICATION	
BLM PFYC Designation	**Assignment Criteria Guidelines and Management Summary**
	Area or geologic unit is poorly or under-studied.
	BLM staff has not yet been able to assess the nature of the geologic unit.
	Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

Source: Summarized and modified from BLM 2016

Regional Geologic Setting

The proposed project site is situated in the Southern Coastal Ranges geomorphic province. The division between the Northern and Southern Coastal Ranges is one of convenience. Both provinces 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, except at San Francisco Bay where a pronounced gap separates the two provinces (Norris and Webb 1990). The differences between the two provinces 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 two Ranges have dissimilar basement rocks. The Northern Range and portions of the Southern Range east of the San Andreas Fault zone are underlain by strongly deformed Franciscan subduction complex rocks, and the areas west of the San Andreas Fault zone, in both the Northern and Southern Range, are 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 Santa Clara Valley, a relatively flat basin, contains alluvial deposits derived from the Diablo Range and the Santa Cruz Mountains. Alluvial deposits are interbedded with bay and lacustrine (lake) deposits in the San Jose area. The valley sediments were deposited as a series of coalescing alluvial fans by streams that drain the adjacent mountains. These alluvial sediments make up the groundwater aquifers of the area (Norris and Webb 1990).

The project site is underlain by Holocene age (less than 11,000 years old) levee deposits and basin deposits (Wentworth et al. 1999). Levee deposits are generally described as loose, moderate- to well-sorted sandy or clayey silt grading to sandy or silty clay. Basin deposits are generally described as dark-colored clay with very fine silty clay, rich in organic material, and deposited beyond the levees and flood plains in the flood basins where stilling flood waters drop their finest sediment (DayZenLLC 2021a). These sediments have low potential to yield fossil resources or to contain significant nonrenewable paleontological resources (DayZenLLC 2021a). However, these Holocene age sediments overlie older, Pleistocene age sediments that have a high potential to contain paleontological resources. The Pleistocene age sediments, often found at depths of ten feet or more below the ground surface in the region, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates. The City of Santa Clara General

Plan, on page 328, suggests that ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources in older Pleistocene sediments (Santa Clara 2010). These geologic materials may be susceptible to some degree of compressibility when subject to new building loads.

Groundwater

Based on cone penetration testing performed during the soil borings completed for the Limited Preliminary Geotechnical Investigation (DayZenLLC 2021b), depth to groundwater in the area can range from approximately 4 to 10 feet below ground surface (bgs). Fluctuations in groundwater levels are common due to seasonal weather patterns, underground drainage patterns, regional fluctuations, and other factors (DayZenLLC 2021a).

Seismicity and Seismic Hazards

The San Francisco Bay Area is one of the most seismically active areas in the United States. The significant earthquakes that occur in the Bay Area are generally associated with crustal movement along well-defined active fault zones of the San Andreas Fault system, which regionally trend in a northwesterly direction (CGS 2010). Higher levels of shaking and damage would be expected for earthquakes occurring at closer distances to the project site. There are no known active or potentially active faults crossing the project site. The three major faults in the region are the Calaveras Fault (approximately 9.4 miles east of the site), the San Andreas Fault (approximately 11.3 miles west of the site), and the Hayward Fault (approximately 6.1 miles east of the site) (DayZenLLC 2021a). The site is not located within an Earthquake Fault Zone as defined by the State of California Alquist-Priolo Earthquake Fault Zoning Act. However, because of the proximity of the site to major active faults, ground shaking, ground failure, or liquefaction due to an earthquake could cause damage to the structures.

Structural design of facilities in California are required to incorporate design features to ensure public safety if a seismic event generates sufficient ground motion to impact the structural integrity of the facility in accordance with California Building Code (CBC 2019). Loose unsaturated sandy soils can settle during strong seismic shaking. However, the soils encountered below the design groundwater level at the site are predominantly clays, separated by a gravel layer (DayZenLLC 2021a). There is a very low potential for liquefaction-induced settlement at the site (DayZenLLC 2021b). Thus, the potential for significant differential seismic settlement affecting the proposed project is relatively low.

Soils

The project site is underlain by alluvium soil. This alluvium consists of moderately consolidated, deeply weathered, poorly sorted, irregularly interbedded clay, silt, sand, and gravel. The topsoil contains agricultural organics primarily consisting of roots and hay. The subsurface soil conditions consist of fill overlying an upper layer of lean clay, a granular layer, and a lower layer of lean clay. Fill encountered at the project site consists of agricultural topsoil composed of lean clay, approximately 2.5 feet thick. The lean clay

is generally brown and contains varying amounts of gravel. Organics are also present within the fill, consisting primarily of roots and hay. The upper layer of lean clay is brown in color, generally medium stiff to very stiff, with varying amounts of sand and gravel present. The thickness of this layer varies across the site, ranging from five to 20 feet thick (DayZenLLC 2021a).

Construction of the Project would occur in phases. ~~Roughly 210,000 cubic yards of fill would be imported to the site to raise the base elevation by approximately four feet (1.5 feet above the base flood elevation.~~ It is possible that up to 10,000 cubic yards of soil and undocumented fill would be removed from the site. Grading of the site is not expected to require the import of fill material. Excavation for utilities would extend to depths of up to 15 feet below the new base elevation (about 11 feet below existing grade) (DayZenLLC 2021a). However, this trenching would most likely occur within the Quaternary age upper clay layer (DayZenLLC 2021a).

Expansive soil can undergo volume changes with changes in moisture content. Specifically, when wetted during the rainy season expansive soil tends to swell, and when dried during the summer months the material shrinks. These volume changes can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. However, expansive soil can be mitigated through removal or mixing with non-expansive soil. The upper clay layer at the project site may have moderate expansion potential and therefore could experience some degree of volume change when subjected to changes in moisture content. An existing mound of stockpiled fill in the northeast corner of the site appears to have a similar or greater expansion potential than that of the upper clay layer (DayZenLLC 2021a).

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). According to the State of California Official Seismic Hazard Zones Map for the San Jose West Quadrangle (California Geological Survey, 2002), the site is in an area considered potentially susceptible to earthquake-induced liquefaction. Plate 1.2 of the State Seismic Hazard Zone Report 058 (California Geological Survey, 2002) estimates the depth to groundwater in the site vicinity to be less than 10 feet below existing site grades. In addition, according to the Association of Bay Area Governments (ABAG) Earthquake Liquefaction Susceptibility Map (Knudsen et al., 2000), the site is in an area considered to have a moderate susceptibility to earthquake-induced liquefaction.

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face such as an open body of water,

channel, or excavation. In soils, this movement is generally due to failure along a weak plane and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil displace laterally towards the open face. Cracking and lateral movement may gradually propagate away from the face as blocks continue to break free. Lateral spreading is generally the most pervasive and damaging type of liquefaction-induced ground failure induced by earthquakes. However, failure in this mode is analytically unpredictable because it is difficult to evaluate where the first tension crack would occur. The project site is relatively flat and there is no open face slope. There are no stream channels on or adjacent to the site, therefore the project site would not be subject to lateral spreading. (DayZenLLC 2021a).

Regulatory Background

Federal

There are no federal regulations related to geology and soils and paleontological resources that apply to this project. However, the Bureau of Land Management (BLM 2016) has developed a Potential Fossil Yield Classification (PFYC) system. Because of its demonstrated usefulness as a resource management tool, the PFYC has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource management tool that classifies geologic units on their likelihood to contain paleontological 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 California Geological Survey (CGS) to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. CGS has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, landslides, and ground shaking, including the central San Francisco Bay Area. The SHMA requires that agencies only approve projects in seismic hazard zones following site-specific geotechnical investigations to determine if the seismic hazard is present and identify measures to reduce earthquake-related hazards.

California Building Standards Code. The California Building Standards Code (CBC) prescribes standards for constructing safer buildings. The CBC contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile,

ground strength, and distance to seismic sources. The CBC requires that a site-specific geotechnical investigation report be prepared for most development projects to evaluate seismic and geologic conditions, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. The CBC is updated every three years; the current version is the 2019 CBC.

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

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

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, title 14, § 15064.5(a)(3)(D)), which is typically interpreted by professional scientists as including fossil materials and other paleontological resources. More specifically, 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 and Operation

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, but there are no known active or potentially active faults crossing the project site. The site is not located within an Earthquake Fault Zone as defined by the State of California Alquist-Priolo Earthquake Fault Zoning Act. The project site is not located within a fault rupture zone (DayZenLLC 2021a). 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. Additionally, operation of the project is not expected to exacerbate rupture of known earthquake faults. Therefore, impacts related to fault rupture will be less than significant.

ii. Strong seismic ground shaking?

Construction and Operation

Less Than Significant Impact with Mitigation Incorporated. Earthquakes along several nearby active faults in the region could cause moderate to strong ground shaking at the site. The intensity of ground motion and the damage done by ground shaking would depend on the characteristics of the generating fault, distance to the fault and rupture zone, earthquake magnitude, earthquake duration, and site-specific geologic conditions. Geologic conditions on the site would require the new building be designed and constructed in accordance with standard engineering techniques and current California Building Code requirements, and mitigation measure **GEO-1** (DayZenLLC 2021a). Building design and construction at the site will be completed in conformance with the recommendations of a design-level geotechnical investigation as required by the CBC, which would be included in a report to the city. With implementation of the seismic design guidelines per the CBC, as well as the mitigation measure (**GEO-1**), construction of the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking. Therefore, risks to people or structures from strong seismic ground-shaking would continue to be less than significant with mitigation incorporated into the project design and the project would not exacerbate the effects of seismic ground shaking.

iii. Seismic-related ground failure, including liquefaction?

Construction and Operation

Less Than Significant Impact with Mitigation Incorporated. The site is in an area considered to have a moderate susceptibility to earthquake-induced liquefaction (DayZenLLC 2021a). However, the project site is not subject to lateral spreading due to

its distance from stream channels. The project site and vicinity are flat and the project site is not within a landslide hazard zone.

The likely consequence of potential liquefaction at the site would be settlement. However, with implementation of seismic design guidelines per the California Building Code (CBC 2019), as well as the anticipated project-specific recommendations in the design-level geotechnical investigation required by the CBC, the project would not expose people or property, directly or indirectly, to significant impacts associated with geologic or seismic ground shaking, including ground failure, liquefaction, or seismically induced subsidence. Therefore, risks to people or structures, or exacerbating ground failure, during strong seismic ground-shaking would continue to be less than significant with mitigation incorporated into the project design.

iv. Landslides?

Construction and Operation

Less Than Significant Impact. The proposed project is not located within a landslide hazard zone (DayZenLLC 2021a). Grading of the project site would not create steep slopes and construction of the proposed project would not cause a landslide. Therefore, risks to people or structures from strong seismic ground-shaking would be less than significant and the project would not exacerbate the effects of seismic ground shaking or a resultant landslide.

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

Construction and Operation

Less Than Significant Impact. Ground disturbance at the site would be required for demolition and on-site improvements. Ground disturbance would expose soils and increase the potential for wind or water related erosion and sedimentation at the site until construction is complete. Compliance with the erosion control measures, as required by the National Pollutant Discharge Elimination System is the primary means of enforcing erosion control measures through the grading and building permit process (DayZenLLC 2021a). In accordance with General Plan policies, construction activities would be subject to the requirements of the regulatory programs and policies in place and, therefore, would have a less than significant soil erosion impact.

Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary and likely small. Continuous operation and maintenance work would not result in increased erosion or topsoil loss and therefore, a less than significant impact would be associated with erosion or loss of topsoil.

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 and Operation

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 follow the California Building Code (CBC) plus any local amendments, which requires that a final geotechnical report is prepared and the design of the building adheres to the findings in the final report, as required in the CBC. Therefore, impacts associated with construction on geologic units or soil that is or would become unstable would have a 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, there would be a less than significant impact with mitigation incorporated.

d. Would the project be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), 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 SHMA and CBC, which would reduce impacts related to expansive soils to a less than significant level. The policies of the City of Santa Clara 2010-2035 General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Santa Clara General Plan Policy 5.10.5-P6 requires that new development be designed to meet current safety standards and implement appropriate building codes to reduce risk associated with geologic conditions (DayZenLLC 2021a). Therefore, risks to people or

structures from expansive soil would be less than significant with mitigation incorporated into the project design.

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 (DayZenLLC 2021a). 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. 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 (UCMP 2021). However, ground disturbing activities of ten feet or more have the potential to impact undiscovered paleontological resources. The CA3 Data Center would require excavation trenching of depths of up to 15 feet. Foundations could be augered cast piles or driven piles, likely to exceed depths of 80 feet. However, alternative foundation designs could be viable based on the results of future geotechnical investigations (DayZenLLC 2021b). Although unlikely, paleontological resources could be encountered during construction of the CA3 Data Center.

The applicant has proposed a measure to reduce impacts to a unique paleontological resource. The measure includes protocols for training, identification of paleontological resources and salvage plan, including treatment and reporting. Staff evaluated this measure in the context of impacts to paleontological resources and considers the measure sufficient to reduce impacts. Staff proposes **GEO-1** to address the potential for discovery of paleontological resources during excavation in native materials.

Although the CA3 Data Center site will be graded and any excavation for deep foundations would be completed prior to installation of any of the CA3 Backup Generating Facilities, construction of the CA3 Backup Generating Facilities would include trenching to install the underground cabling for the electrical interconnection between each generator yard and the facilities they serve. This trenching is most likely to occur in previously disturbed soils shallower than 10 feet. It is unlikely that trenching activities will encounter potential paleontological resources. However, any potential impacts from the trenching activities would be reduced to less than significant levels significant with **GEO-1**.

There is no potential to disturb paleontological resources during operations because there would be no earth-moving activities required for operations. Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary, small, and most likely limited to disturbance of fill.

With implementation of **GEO-1**, impacts to paleontological resources would be reduced to a less than significant level. There are no unique geologic features within the site footprint.

4.7.3 Mitigation Measures

GEO-1: The project proposes to implement the following measures to ensure impacts to paleontological resources are reduced to less than significant.

- Prior to the start of any subsurface excavations that would extend beyond previously disturbed soils, all construction forepersons and field supervisors shall receive training by a qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology, who is experienced in teaching non- specialists, to ensure they can recognize fossil materials and shall follow proper notification procedures in the event any are uncovered during construction. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who shall evaluate its significance.
- If a fossil is found and determined by the qualified paleontologist to be significant and avoidance is not feasible, the paleontologist shall develop and implement an excavation and salvage plan in accordance with Society of Vertebrate Paleontology standards. Construction work in these areas shall be halted or diverted to allow preparation of the plan and recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall then be deposited in a scientific institution with paleontological collections. A final Paleontological Mitigation Plan Report that outlines the results of the mitigation program shall be prepared and submitted to the Director or Director's designee with the City of Santa Clara Community Development Department.~~Department of Planning, Building and Code Enforcement (PBC)~~ at the conclusion of construction. The Director or Director's Designee with the City of Santa Clara ~~PBCE~~ shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented.

4.7.4 References

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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 CA3 Data Center (CA3DC) and the associated CA3 Backup Generating Facility (CA3BGF), collectively called "the project" in the analysis that follows.

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

In this analysis, CEC staff (staff) concludes that, with the implementation of mitigation measures **GHG-1**, **GHG-2**, and **GHG-3**, 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

CEQA Guidelines for GHG Emissions. With the enactment of Senate Bill 97 (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) California Environmental Quality Act (CEQA) Guidelines include recommended thresholds of significance for determining whether projects would have significant adverse environmental impacts.

Construction/Demolition Emissions. For construction-related GHG emissions, the BAAQMD CEQA Guidelines do not identify a 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). However, the threshold of 10,000 $MTCO_2e/yr$ was based on the state's 2020 GHG target, codified in Health and Safety Code, section 38550, which is now superseded by the 2030 GHG target, codified in Health and Safety Code, section 38566, as enacted in SB 32, and a 2045 target set forth in former Governor Brown's Executive Order B-55-18. BAAQMD staff 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 State Air Resources Board's (CARB) cap-and-trade program, codified in Health and Safety Code, section 38562. The current planned adoption date for the proposed changes in the CEQA GHG significance thresholds is February or March 2022 (BAAQMD 2021). In this analysis in addition to the existing BAAQMD CEQA Guidelines threshold of significance of 10,000 $MTCO_2e/yr$, staff also evaluates 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 $MTCO_2e/yr$.

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, GHG impacts from all other project-related emissions sources would be considered to have a less-than-significant impact if the project is consistent with the city of Santa Clara Climate Action Plan (CAP). Other applicable regulatory programs and policies adopted by CARB or other California agencies, described under Regulatory Background, also contribute to staff's analysis of impacts.

The city of Santa Clara CAP and accompanying environmental documentation are consistent with the guidelines set forth by BAAQMD for a Qualified GHG Reduction Strategy, which parallel and elaborate upon criteria established in the CEQA Guidelines, California Code of Regulations, Title 14, section 15183.5(b)(1) (Santa Clara 2013). As a result, a lead agency may conclude that a project's incremental contribution to a cumulative effect is not cumulatively considerable if it complies with the requirements of the Santa Clara CAP. However, an environmental document that relies on it "must identify those requirements specified in the plan that apply to the project, and, if those

requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project."[1]

Specifically, the 2013 Santa Clara CAP meets the following criteria for a Qualified Climate Action Plan (with Chapter references referring to the 2013 CAP):

- Quantify emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area (see Chapter 2).
- Establish a level, based on substantial evidence, below which the contribution of emissions from activities covered by the plan would not be cumulatively considerable (see Chapter 2).
- Identify and analyze the emissions resulting from specific actions or categories of actions anticipated within the geographic area (see Chapter 3 and Chapter 4).
- Specify measures or a group of measures, including performance standards that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level (see Chapter 4).
- Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specific levels (see Chapter 5).
- Adopt the GHG Reduction Strategy in a public process following environmental review. (Santa Clara 2013, p. 8.)

It should be noted that the current versions of the CAP and CARB's scoping plan are somewhat outdated, having focused on the near-term 2020 and 2030 GHG goals. They do not address the sharp cuts that will be needed to meet the Executive Order's 2045 goals and beyond.

The city of Santa Clara is in the process of updating the CAP with a planned adoption date of April 2022 (Santa Clara 2021, CEC 2021x). Staff expects this update to similarly function as a Qualified GHG Reduction Strategy; therefore, this analysis discusses the new requirements of the proposed updates where applicable. The 2022 update to CARB's scoping plan, a statewide planning document that coordinates the main strategies the state will use to reduce GHG emissions, is currently under development to incorporate the Executive Order's 2045 target.

a. Construction/Demolition Emissions

As discussed in more detail under environmental checklist criterion "a," the applicant estimated that the construction sources would generate a total of approximately 974 $MTCO_2e$ during the estimated 22 months of construction and demolition (CEC 2022a). Therefore, the project's short-term construction-related GHG emissions have been quantified and disclosed. In addition, the project would implement BMPs, as specified in mitigation measure **AQ-1**, that would reduce construction-related GHG emissions. The

1 CEQA Guidelines, § 15183.5(b)(2).

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. Staff concludes that the project's construction-related GHG emissions impacts would be less than significant.

b. Direct Stationary Source Emissions (Emergency Backup Generators)

The project's emergency backup generators are 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. As discussed above, the BAAQMD CEQA Guidelines' current GHG threshold for stationary sources is 10,000 $MTCO_2e$/yr and BAAQMD staff is in the process of preparing and presenting to the BAAQMD board for approval an update to lower the threshold of significance to 2,000 $MTCO_2e$/yr or compliance with CARB's cap-and-trade program.

As discussed in more detail under environmental checklist criterion "a," the applicant conservatively estimated that GHG emissions from the emergency backup generators would be 3,387 $MTCO_2e$/yr based on 35 hours of annual readiness testing and maintenance at 100 percent load per engine. GHG emissions from the emergency backup generators would be lower than the BAAQMD CEQA Guidelines' current GHG threshold of significance of 10,000 $MTCO_2e$/yr. But in the future, the project may be subject to a new BAAQMD CEQA Guidelines GHG threshold of 2,000 $MTCO_2e$/yr or compliance with CARB's cap-and-trade program. 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. To reflect a potential change in the BAAQMD significance threshold, staff proposes mitigation measure **GHG-1** to require the applicant to limit the GHG emissions of the emergency backup generators to whichever BAAQMD CEQA Guidelines GHG threshold is applicable at the time of permitting with BAAQMD. Staff expects that if the applicant accepts a permit limit of 20 hours of annual readiness testing and maintenance per engine, the GHG emissions of the emergency backup generators would be about 1,935 $MTCO_2e$/yr, which is lower than 2,000 $MTCO_2e$/yr. Staff also proposes mitigation measure **GHG-2** to require the applicant to use an increasing mix of renewable diesel and ultimately phase out the use of ultra-low sulfur petroleum-based diesel.

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. 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 even with a limit of 20 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 eight (= 20-12) hours per year. Thus, a limit of 20 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.

Staff concludes that with the implementation of mitigation measures **GHG-1** and **GHG-2**, the GHG emissions from the project's stationary sources would be less than significant.

c. 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, natural gas use for comfort heating, and electricity use. The GHG emissions from indirect and non-stationary sources are shown in **Table 4.8-4** under 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 CAP and applicable regulatory programs and policies adopted by CARB or other California agencies. Under environmental checklist criterion "b," staff identifies the requirements specified in the 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 840,960 megawatt hours (MWh) of electricity per year after full build- out, but actual electricity demand would be lower. With the carbon intensity of 277 lbs CO_2/MWh for 2025 based on Silicon Valley Power's (SVP) prediction and CalEEMod default methane (CH_4) and nitrous oxide (N_2O) intensity factors, the worst-case GHG emissions due to electricity use during full build-out operation would be 106,596 $MTCO_2e$/yr.

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 will be much less than 106,596 $MTCO_2e$/yr since actual electricity use will be less than the maximum and the SVP annual average emission factor will 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 of Santa Clara is in the process of updating the CAP with a planned adoption date of April 2022 (Santa Clara 2021, CEC 2021x). The draft 2022 CAP Update would include 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." Considering the additional time needed for the city and BAAQMD to permit the project, it is likely that the project would be subject to Action B-1-7. Even if the project obtains its permits in time to avoid application of Action B-1-7, staff concludes that without this requirement the project could result in a significant, adverse impact as a result of its indirect GHG emissions. Therefore, staff proposes mitigation measure **GHG-3** 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 ~~carbon offsets~~ renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity.

As discussed in detail under 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 **GHG-2** and **GHG-3**, 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 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 City of Santa Clara 2010-2035 General Plan [General Plan], Measure 6.1 and Measure 6.3 in the 2013 CAP, Action T-3-1 and Action T-1-5 in the draft 2022 CAP Update), water (5.10.3-P6, 5.10.4-P6, 5.10.4-P7 in the General Plan, Measure 3.1 in the 2013 CAP, Action N-3-4 and Action N-3-6 in the draft 2022 CAP Update), and waste (Measure 4.2 in the 2013 CAP, Action M-3-1 in the draft 2022 CAP Update). Therefore, 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.

In summary, staff concludes that with the implementation of mitigation measures **GHG-2** and **GHG-3**, 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]). 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.

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.

For example, CH_4 has a GWP of 28 over 100 years from the Fifth Assessment Report (AR5) 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. The Sixth Assessment Report is due in 2022 (IPCC 2017).

Regulatory Background

Federal

The project would not be subject to any federal requirements for GHGs.

State

Early State Actions

California Global Warming Solutions Act of 2006. In 2006, the state Legislature passed the California Global Warming Solutions Act of 2006 Health and Safety Code, section 38500 et. seq), or Assembly Bill (AB) 32, 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 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 $MMTCO_2e$. The 2022 update of the scoping plan is a plan for California's targets beyond 2030.

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 (17 CCR §§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 Safety Code, section 38562; 17 CCR §§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).

Other Key Programmatic Milestones

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 (SB) X1-2 of the First Extraordinary Session (SB X1-2) 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.

- **Senate Bill 350:** Beginning in 2016, SB 350 took effect as the Clean Energy and Pollution Reduction Act of 2015, 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.
- **Senate Bill 100:** 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.

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 methane and hydrofluorocarbons 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.

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." In 2019, emissions from GHG emitting activities statewide were 418.2 $MMTCO_2e$, 7.2 $MMTCO_2e$ lower than 2018 levels and almost 13 $MMTCO_2e$ below the 2020 GHG Limit of 431 $MMTCO_2e$ (CARB 2021). California will 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 will 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). The 2022 update to CARB's Scoping Plan is currently under development to plan for the 2045 target set forth by Executive Order B-55-18.

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, 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 would reach one percent in 2020 and remain at that level going forward. However, data show that statewide SF_6 capacity is growing by one to five percent per year, which will increase the expected SF_6 emissions. On August 31, 2021, CARB submitted to the Office of Administrative Law amendments to the SF_6 regulation that, among other things, will expand the scope to include other GHGs beyond SF_6, change the term GIS to "gas-insulated equipment" (GIE) to include more devices beyond switchgear, establish a timeline for phasing out the acquisition of SF_6 GIE in California that would take effect in stages between 2025 and 2033, and reduce total GHG emissions from GIE.

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 the comment letter on the Notice of Preparation for this EIR, 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 recommends that the GHG analysis should evaluate the consistency of the project with California's 2030, 2045 and 2050 climate goals (BAAQMD 2021b). BAAQMD staff is 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 current value of 10,000 $MTCO_2e$/yr to 2,000 $MTCO_2e$/yr or compliance with CARB's cap-and-trade program. The current planned BAAQMD board adoption date for the proposed changes in the CEQA Guidelines GHG significance thresholds is February or March 2022 (BAAQMD 2021).

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 Senate Bill 375 (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 (CAP, Santa Clara 2013). The 2013 CAP identified the city's approach to achieve its share of statewide emissions reductions for the 2020 timeframe 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 2013 CAP also includes an adaptive management process that can incorporate new technology and respond when goals are not being met.

A key reduction measure undertaken by the city under the CAP is in the Coal-Free and Large Renewables focus area. SVP, the city's municipal electricity utility, provides electricity for the city, including the project site. Since nearly half (48 percent) of the city's GHG emissions are from electricity use, reducing GHG-intensive electricity generation (such as coal) is a major focus area in the CAP (Santa Clara 2013). SVP reduced coal generation in 2017 by divesting its interest in San Juan Generating Station located in New Mexico effective January 1, 2018 (Santa Clara 2018).

The CAP also includes measures to improve energy efficiency. Measure 2.3 in this focus area calls for 10 percent of new data centers to incorporate energy efficient practices. All new data centers since 2013 have utilized energy efficient cooling practices, exceeding this goal (Santa Clara 2018).

In 2016 the city produced its first Annual Report on the CAP. It reviewed its 2013 CAP again in the summer of 2018 (Santa Clara 2018), stating that the 2013 CAP "meets the criteria for a Qualified GHG Reduction Strategy" as established by the CEQA guidelines. As such, the CAP can be used to streamline the environmental review process for new development. However, to remain a Qualified GHG Reduction Strategy, the city must monitor and update the CAP. In the updated 2018 Annual Report, the city stated that it has been successful in achieving a 4.5 percent reduction in GHG emissions relative to their 2008 baseline, which is equivalent to the city's 1990 emissions. The 2018 Annual Report indicated the city was on track to reduce the city's emissions to 15 percent below their baseline amount by 2020. It also stated that the CAP includes three "reach measures" to reduce GHG emissions 55 percent below the city's 1990 GHG emissions by the year 2035, to meet post-2020 GHG reduction goals. These reach goals call for a more aggressive implementation of CAP strategies for the 2020 time-frame (Santa Clara 2013).

In 2016, SVP was the largest source of GHG emissions in the city's GHG emissions inventory, with 97 percent of all GHG sources attributed to the city.

The city of Santa Clara has prepared a draft CAP Update, which is tentatively planned to be adopted in early 2022 (Santa Clara 2021, CEC 2021x). The draft 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 draft 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. This requirement does not apply to data centers with planning application approval within six months of the CAP adoption date (CEC 2021x).
- 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 of Santa Clara 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.

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 recently 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 2021b). 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) customer provides 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 substantial contributor to global GHG emissions. The total gross California GHG emissions in 2019 were 418.2 $MMTCO_2e$ (CARB 2021). The largest category of GHG emissions in California is transportation, followed by industrial activities and electricity generation in state and out of state (CARB 2021). In 2019, total gross U.S. greenhouse gas emissions were 6,558 $MMTCO_2e$, or 5,769 $MMTCO_2e$ after accounting for sequestration from the land sector (U.S. EPA 2021).

The city prepares an annual report to assess progress towards meeting the GHG emissions reduction targets established in the 2013 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 city. **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 2021a). A comparison of SVP's and the statewide power mix for 2020 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 2021a). 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 – 2020

Energy Resources	Santa Clara Residential Mix	Santa Clara Non-Residential Mix	Santa Clara Green Power Standard Mix	Santa Clara Green Power National Mix	2020 CA Power Mix
Eligible Renewable	**40.2%**	**31.7%**	**100%**	**26.0%**	**33.1%**
Biomass & Biowaste	0%	2.6%	0%	0.5%	2.5%
Geothermal	0%	8.1%	0%	5.2%	4.9%
Eligible Hydroelectric	0%	8.8%	0%	6.4%	1.4%

TABLE 4.8-2 COMPARISON OF SVP AND STATEWIDE POWER MIX – 2020

Energy Resources	Santa Clara Residential Mix	Santa Clara Non-Residential Mix	Santa Clara Green Power Standard Mix	Santa Clara Green Power National Mix	2020 CA Power Mix
Solar	11.1%	0%	100%	0%	13.2%
Wind	29.1%	12.2%	0%	13.9%	11.1%
Coal	**0%**	**0%**	**0%**	**0%**	**2.7%**
Large Hydroelectric	**59.8%**	**12.2%**	**0%**	**13.5%**	**12.2%**
Natural Gas	**0%**	**18.4%**	**0%**	**36.9%**	**37.1%**
Nuclear	**0%**	**0%**	**0%**	**0%**	**9.3%**
Other	**0%**	**0%**	**0%**	**0%**	**0.2%**
Unspecified sources of power	**0%**	**37.6%**	**0%**	**23.7%**	**5.4%**
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**

Source: SVP 2021a

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, natural gas use for comfort heating, 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 these sources would generate a total of approximately 974 $MTCO_2e$ during the estimated 22 months of construction and demolition (CEC 2022a).

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 of materials generated for discards by the project to reduce the amount of demolition and construction waste going to the landfill. The quantity of construction-related GHG emissions would be limited to the construction phase, which would ensure GHG impacts are less than significant.

The CAP Measure 5.2 calls for construction vehicles to use alternative fuels, such as electricity, biodiesel, or compressed natural gas, when possible. The CAP notes that the city can make the use of alternative fuels a condition of approval for new developments during pre-construction review meetings (Santa Clara 2013).

Operation and Maintenance

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 "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, natural gas use for comfort heating, and electricity use.

i. Direct Project Stationary Combustion Sources

Table 4.8-3 shows the maximum potential annual GHG emission estimates for the emergency backup generators routine readiness testing and maintenance. The emissions are estimated based on 35 hours of annual testing and maintenance at 100 percent load per engine.

Table 4.8-3 shows that the estimated average annual GHG emissions from the project's stationary sources, the emergency backup generators, for routine readiness testing and maintenance are well below the current 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. However, as mentioned above, BAAQMD staff is 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. Therefore, staff proposes mitigation measure **GHG-1** to require the applicant to limit the GHG emissions of the emergency backup generators to the BAAQMD CEQA Guidelines GHG threshold applicable at the time of permitting. These emissions could be reduced further by using renewable diesel in place of petroleum-based diesel. Because of California's ambitious GHG emissions reduction goals, staff concludes it is imperative that all feasible methods of carbon reduction be employed to ensure the project GHG emissions are less than significant. Therefore, staff also proposes mitigation measure **GHG-2** to require the applicant to use an increasing mix of renewable diesel and phase out the use of ultra-low sulfur diesel. Staff analyzes the effectiveness of these approaches separately.

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	3,387
Proposed Future BAAQMD Threshold	2,000
Exceeds Threshold?	Yes

Source: DayZenLLC 2021b, CEC staff analysis

1) **Limiting GHG Emissions.** The applicant estimated the GHG emissions of the emergency backup generators shown in **Table 4.8-3** are conservatively based on 35 hours of annual readiness testing and maintenance at 100 percent load per engine. Staff estimates that, if the applicant accepts a permit limit of 20 hours of annual readiness testing and maintenance per engine, the GHG emissions of the emergency backup generators would be about 1,935 $MTCO_2e$/yr, which would not exceed 2,000 $MTCO_2e$/yr. Since the monthly testing would occur at 0 percent load for up to 15 minutes and annual testing would only be conducted once per year at a series of stepped loads up to 100 percent load (DayZenLLC 2021t), staff expects the applicant would be able to accept a permit limit of 20 hours of annual testing and maintenance per engine to lower the GHG emissions to 2,000 $MTCO_2e$/yr, if it is applicable at the time of permitting.

2) **Using Renewable Diesel.** The applicant could also reduce the GHG emissions of the emergency backup generators by replacing the ultra-low sulfur petroleum-based diesel with renewable diesel. BAAQMD 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, if the project can substitute the proposed use of ultra-low sulfur petroleum-based diesel with a renewable non-petroleum resource, the portion of the project's GHG emissions from the biogenic resources would be exempt from the stationary source threshold.

   As shown in **Table D-1** in **Appendix D**, renewable diesel used in place of ultra-low sulfur petroleum-based diesel can reduce CO_2 tailpipe emissions approximately 3 to 4 percent. However, renewable diesel is produced with a fuel-cycle that is a far lower carbon intensity (CI) than ultra-low sulfur petroleum-based diesel. In staff's

independent analysis, staff compared fuel-cycle GHG emissions from using renewable diesel and petroleum-based diesel. Based on data from CARB's Low-Carbon Fuel Standard regulations (17 CCR §§95480 to 95503), staff computed that the fuel-cycle GHG emissions of the emergency backup generators would decrease from 3,387 $MTCO_2e$/yr using petroleum diesel to 1,107 $MTCO_2e$/yr with renewable diesel.

As discussed in **Section 5 Alternatives**, renewable diesel is expected to become more widely available in the future when more suppliers come online and fuel-cycle GHG emissions would be reduced using renewable diesel. As explained in detail under environmental checklist criterion "b," staff recommends mitigation measure **GHG-2** to require the project to use an increasing mix of renewable diesel. With **GHG-2**, the project's GHG emissions from stationary sources would be further reduced.

With the implementation of **GHG-1** and **GHG-2**, the environmental impact of GHG emissions from the project's stationary sources would be reduced to a level that would not be significant.

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. 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 96 MW but will be built in phases. The applicant estimated energy use from the project activities for Phase 1 to be 473,040 MWh/year. After full build-out, staff estimates that the worst-case energy use from the project's activities would be up to 840,960 MWh/year (= 96 MW × 8,760 hours/year).

Electricity for the project would be provided by SVP. The applicant used carbon intensity factors from "SVP Email to City of Santa Clara on Carbon Intensity Factor" from the Sequoia Data Center Project proceeding (SVP 2019). For energy use emissions for the first phase of operations, the applicant used a carbon intensity value of 250 pounds CO_2 per MWh (lbs CO_2/MWh), which is the average value for 2023 and 2024 from SVP's email. For operation with full build-out, the applicant used a carbon intensity value of 277 lbs CO_2/MWh for 2025 from SVP's email. SVP's carbon intensity factor for electricity generation will continue to change as SVP's power mix continues to increase the percentage of electricity obtained from renewable resources. Since it is not clear whether the SVP carbon intensity values already include CH_4 or N_2O, the applicant conservatively used the CalEEMod default CH_4 and N_2O intensity factors of 0.029 and 0.006 lbs/MWh, respectively. **Table 4.8-4** shows the worst-case GHG emissions due to electricity use, which would be during full build-out operation. 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 value of 219 lbs CO_2/MWh for 2030 from SVP's email, the worst-case GHG emissions due to electricity use would still be about 84,472 $MTCO_2e$/yr.

Project Mobile Emissions Sources. Table 4.8-4 shows the applicant's estimated annual GHG emissions from mobile emissions sources. The applicant relied on a project operational trip generation consistent with the transportation operation analysis memo. The transportation analysis states that the net project trip rate would be negative (-658 trips per day) based on an estimate of 1,125 trips per day from the existing land use and 467 trips per day from project operations. However, the applicant conservatively estimated the GHG emissions based on 467 trips per day for the project.

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-eight (48) air-cooled chillers with ambient free-cooling economizers located on roof dunnage. The refrigerant used in the air-cooled chillers proposed would be R-134a. The chiller manufacturer estimates a worst case (barring unpredictable catastrophes) of 1 percent annual refrigerant loss a year. Each chiller is charged with 811.4 lbs of R-134a (DayZenLLC 2021m). Staff estimated a total of 389 lbs of refrigerant would be lost in a year for all (48) of the chillers for the whole project. Since R-134a has a GWP of 1,430, the project would create about 253 $MTCO_2e$ into the atmosphere due to refrigerant loss.

Summary of Indirect and Non-stationary GHG Emissions. As shown in **Table 4.8-4**, operation of the project is estimated to generate 107,383 $MTCO_2e$/yr from maximum possible electricity use and other non-stationary sources. The majority of emissions would be from the energy use, which is estimated to be up to 106,596 $MTCO_2e$/yr. As described above, electricity to the project would be provided by SVP, a utility that is on track to meet their 2030 GHG emissions reductions target, as described in their CAP 2018 Annual Report and as verified by staff. Actual GHG emissions associated with electricity use at the project would be much less than 106,596 $MTCO_2e$/yr since actual electricity use will be less than the maximum and the SVP annual average emission factor will 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. For example, programs to implement SB 350 and SB 100 would continue to promote renewable resources in the power mix and ensure ongoing substantial reductions in GHG emissions from electricity generation.

To reduce GHG emissions associated with the use of energy during building operations, the project proposes to implement a variety of energy efficiency measures: daylight penetration to offices, reflective roof surface, meet or exceed Title 24 building standards requirements, electric vehicle (EV) parking, low-flow plumbing fixtures, and landscaping would meet the city's requirements for low water use. 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).

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]	106,596
Mobile Sources [b]	248
Landscaping	0.0102
Water Use	2
Waste Disposed	284
Cooling System R-134a Leakage [c]	253
Total	107,383

Sources: DayZenLLC 2021b, DayZenLLC 2021m, CEC staff analysis.
Notes:
[a] Based on SVP carbon intensity factor of 277 lbs of CO_2 per MWh for 2025, with 0.029 lbs of CH_4 per MWh and 0.006 lbs of N_2O per MWh. CEC staff assumed the worst-case electricity use of 840,960 MWh/year after full build-out.
[b] Conservatively based on 467 trips per day from project operations.
[c] Estimate based on the chiller manufacturer estimated worst-case 1 percent leakage rate per year (DayZenLLC 2021m) and an AR4 GWP of 1,430 for R-134a (more conservative than AR5 GWP of 1,300). The regulatory leakage rate limit would be 10 percent per year, which would increase the maximum allowable GHG annual emissions tenfold to 2,526 $MTCO_2e$.

Conclusion

Less Than Significant with Mitigation Incorporated. The project's GHG emissions are estimated to be a total of approximately 974 $MTCO_2e$ during the 22-month demolition and construction period. Post-construction estimated emissions from the emergency backup generators during readiness testing and maintenance are estimated to be 3,387 $MTCO_2e$/yr as shown in **Table 4.8-3**.

The project's GHG emissions from the annual readiness testing and maintenance of the emergency backup generators would be below the current BAAQMD CEQA Guidelines threshold of significance of 10,000 $MTCO_2e$/yr. However, BAAQMD staff is in the process of preparing and presenting to the BAAQMD board 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. To ensure the project would comply with the possible future CEQA GHG threshold change, staff recommends mitigation measure **GHG-1** to ensure that the GHG emissions of the emergency backup generators are limited to the

BAAQMD CEQA Guidelines GHG threshold of significance applicable at the time of permitting. Additionally, staff recommends **GHG-2** to require the emergency backup generators to use renewable diesel to ensure that operation of the emergency backup generators would not hinder California's efforts to achieve statewide 2030 or 2045 GHG emissions reduction goals. With these measures, the project's direct GHG emissions from stationary sources would not have a significant direct or indirect impact on the environment.

As discussed below, with the implementation of **GHG-2** and **GHG-3**, the GHG emissions from the project's electricity use, mobile sources, and building operation would occur in a manner consistent with 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. Therefore, the maximum potential rate of GHG emissions from the project's electricity use, 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 emergency backup generators. 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. Additionally, the requirement to use increasing amounts of renewable diesel fuel would ensure that any GHG emissions resulting from emergency operations are minimized to the extent feasible. Staff, therefore, concludes that these emissions 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. 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 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) and 5.10.3-P5 (reduce energy consumption through sustainable construction practices, materials, and recycling). The project would also be consistent with Measure 4.2, Increased Waste Diversion, and Measure 5.2, Alternative Construction Fuels, in the 2013 CAP and Action M-3-1, Reuse of salvageable building materials, in the draft 2022 CAP Update.

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 all feasible methods of carbon reduction be employed to ensure the project's GHG emissions are less than significant. To reduce the GHG emissions from the emergency backup generator engines, staff recommends mitigation measure **GHG-2** to require the project to use an increasing mix of renewable diesel in the emergency backup generator engines that reflects statutory targets for renewable resources in California's electricity supply. Staff concludes SB 100 establishes a reasonable schedule for increasing reductions in emissions associated with electricity generation, and 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 that schedule to the project for the purpose of increasing the portion of renewable diesel used over time. The mitigation would require annually reporting the status of procuring and using renewable diesel. The mitigation measure would require renewable diesel for a minimum of at least 44 percent of total energy use by the emergency backup generators by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030. Renewable diesel would be 100 percent of total energy use by the emergency backup generators by December 31, 2045. With **GHG-2**, the project's stationary sources would use renewable diesel to ensure that the operation of the emergency backup generators would not hinder California's efforts to achieve the statewide 2030 or 2045 GHG emissions reduction goals.

Regional Plans, Policies, and Regulations

Bay Area 2017 Clean Air Plan. With **GHG-2**, 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 as a transportation fuel. There are both federal (CEC 2020) 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. Staff proposes mitigation measure **GHG-2** to require the applicant to use an increasing mix of renewable diesel and phase out the use of petroleum-based diesel.

Local Plans, Policies, and Regulations

Applicable General Plan Policies. 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 generator testing schedule includes measures to reduce local air quality impacts. The project would be consistent with the air quality policy 5.10.2-P3 in the General Plan.

Alternative Fuel Backup Generators. The draft 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. The applicant has recently set a corporate commitment to achieve net zero carbon emissions by 2030. As part of the strategy to achieve this aggressive goal, the project applicant is actively exploring all options to reduce or eliminate the emissions from the use of diesel-fueled emergency backup generators. The applicant is conducting a feasibility analysis for the use of renewable diesel. The applicant is measuring its GHG footprint and will be achieving commitment to net zero carbon emissions by 2030. Carbon removal offsets will be purchased for emissions that the applicant cannot eliminate through efficiency measures. Investments in carbon removal projects at a local/regional level where the applicant's projects operate will be prioritized (DayZenLLC 2021m).

As discussed in **Section 5 Alternatives**, renewable diesel is expected to become more widely available in the future and would reduce the project's GHG emissions. Therefore, staff proposes mitigation measure **GHG-2** to require the applicant to use an increasing mix of renewable diesel and phase out use of ultra-low sulfur petroleum-based diesel.

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, will 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 96 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 mitigation measure **GHG-3** to require 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 ~~carbon offsets~~ 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 of Santa Clara. 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).

With **GHG-3**, 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 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. The energy efficiency measures include: (1) premium efficiency electrical distribution equipment for the critical information technology (IT) systems, (2) ambient free-cooling coils on the air cooled chillers, (3) adiabatic assist pads on the condenser coils of the chillers, and (4) heat recovery on the Variable Refrigerant Flow (VRF) systems (DayZenLLC 2021m). Staff also proposes mitigation measure **GHG-3** to require 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 ~~carbon offsets~~ 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).

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

Local Plans, Policies, and Regulations

Applicable General Plan Policies. 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 4.8-5** below. As shown, the project would be consistent with the applicable sustainability policies in the General Plan.

TABLE 4.8-5 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-P4 Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.	Water conservation and energy efficiency measures included in the project would reduce GHG emissions associated with the generation of electricity.
Energy Policies	
5.10.3-P1 Promote the use of renewable energy resources, conservation, and recycling programs.	The project would utilize lighting control to reduce energy usage for new exterior lighting and air economization for building cooling. Water efficient landscaping and ultra-low flow plumbing fixtures in the building would be installed to limit water consumption.
5.10.3-P4 Encourage new development to incorporate sustainable building design, site planning, and construction, including encouraging solar opportunities.	
5.10.3-P5 Reduce energy consumption through sustainable construction practices, materials, and recycling.	
5.10.3-P6 Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.	
5.10.3-P8 Provide incentives for LEED certified, or equivalent development.	
Water Use Policies	
5.10.4-P6 Maximize the use of recycled water for construction, maintenance, irrigation, and other appropriate applications.	The project would use recycled water for mechanical cooling and for landscaping.
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.

City of Santa Clara Climate Action Plan. Discussion of the project's conformance with the applicable reduction measures for new development in both the 2013 CAP and the draft 2022 CAP Update are provided below:

Energy Efficiency Measures. Measure 2.3, Data Centers, in the 2013 CAP calls for the completion of a feasibility study of energy efficient practices for new data center projects with an average rack power rating[2] of 15 kilowatts (kW) or more to achieve a power usage effectiveness (PUE) of 1.2 or lower. The average rack power rating for the project is estimated at 8.3 kW, which is significantly below the threshold to trigger a formal feasibility study of energy efficient practices. The annual average PUE of the project would be 1.26 if the building was fully leased and every client utilized its full capacity. The applicant has found that clients do not utilize the full capacity of what

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

they lease and, therefore, expects the actual PUE to be on the order of 1.25 or lower, which is slightly above Measure 2.3's goal of a PUE of 1.2 or lower. However, the project would have an average rack rating estimated to be 8.3 kW, which is lower than the threshold of 15 kW at which the city requires a feasibility study (DayZenLLC 2021m). The draft 2022 CAP Update does not include this control measure, but includes more actions specifically related to data centers as described below.

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 (Title 24, Part 11 of the California Code of Regulations). This would be consistent with the purpose of Action B-2-3 Energy-efficient and electric-ready building code in the draft 2022 CAP Update.

Water Conservation Measures. Measure 3.1, Water Conservation, in the 2013 CAP calls for a reduction in per capita water use to meet urban water management targets by 2020. Development standards for water conservation would be applied to increase efficiency in indoor and outdoor water use areas. Water conservation measures include the use of the following:

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

These water conservation measures would be consistent with Action N-3-4, Water-efficient landscaping requirements, and Action N-3-6, Recycled water connection requirements, in the draft 2022 CAP Update.

Transportation and Land Use Measures. Measure 6.1, Transportation Demand Management, program in the 2013 CAP requires new development located in the city's transportation districts to implement a transportation demand management (TDM) program to reduce drive-alone trips. The project would be required to have a 25-percent vehicle miles traveled (VMT) reduction, with 10 percent coming from TDM measures. An exception to these reduction requirements is made for projects located on properties with a General Plan designation of Light Industrial, such as the project site. Nevertheless, the project would be required to comply with General Plan Policy 5.8.5-P1, which requires new development to implement TDM programs that can include site-design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage, and recreational facilities. Action T-3-1 TDM plan requirements in the draft 2022 CAP Update would also require a 25 percent reduction in project based VMT through active TDM requirements for large employers

over 500 employees, including aggressive regulations to reduce parking in new development.

Electric Vehicle Charging Spaces. Measure 6.3 of the 2013 CAP recommends five percent of all new parking spaces be designated for electric vehicle (EV) charging. The project would provide a total of 30 parking spaces on site including one accessible and one van-accessible parking space. The applicant would provide four EV charging spaces and six Clean Air Vehicle spaces on site. Additionally, up to 96 parking places for the project will be provided across Walsh Avenue on Vantage's CA1 existing campus, but only 87 would be required. Nine EV charging spaces and 12 Clean Air Vehicle spaces would be provided at the CA1 campus (DayZenLLC 2021hh). The project would be consistent with Measure 6.3 of the 2013 CAP. Action T-1-5 Office EV chargers in the draft 2022 CAP Update would also require the city's Community Development Department, Building Division, to implement proposed Reach Code to require all new commercial office units to install Level 2 charging stations at 10 percent of parking spaces, Level 1 circuits at 10 percent of parking spaces, and 30 percent EV-capable.

Urban Cooling. Measure 7.2 of the 2013 CAP and Action C-2-3, High-albedo parking lots, in the draft 2022 CAP Update both require new parking lots be surfaced with more sustainable pavement materials to reduce heat gain. The project would meet the CAP as adopted in its City Code. Trees are proposed to be planted adjacent to the parking bays. If identified as a requirement by the city during the building permit phase, a high-albedo surface paving course (such as a light-colored chip-seal) can be placed over the asphalt paving in the parking bays (DayZenLLC 2021m).

Carbon Neutral Data Centers and Renewable Electricity for New Data Centers. The draft 2022 CAP Update includes Action B-1-7, Carbon neutral data centers, which would require all new data centers to operate on 100 percent carbon neutral energy, with offsets as needed. However, this requirement would not apply to data centers with planning application approval within six months of the CAP adoption date, which is planned for April 2022 (CEC 2021x). In addition, the draft 2022 CAP Update also includes Action B-3-7, Renewable electricity for new data centers, which requires the city/SVP to support convening of a data center working group to identify and implement renewable electricity purchasing options for commercial customers. SVP is on track to meet the state's GHG emissions reduction goals. As mentioned above, the applicant is measuring its GHG footprint and will be achieving its commitment to net zero carbon emissions by 2030. It is unclear whether the project would be approved by the city within six months of the 2022 CAP Update adoption date. Considering the additional time needed for the city and BAAQMD to permit the project, it is possible the project could be subject to Action B-1-7 in the draft 2022 CAP Update. Even if the project's applicant obtains its city permit in time to avoid the application of Action B-1-7, staff concludes that the project must employ all feasible means available to reduce its GHG emissions to avoid a significant adverse environmental impact. Therefore, staff proposes mitigation measure **GHG-3** to

require the 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 ~~carbon offsets~~ renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity. The applicant is working with SVP to see if an option for the provision of lower carbon electricity is available and feasible.

The applicant would incorporate measures from the CAP, as specified by the city during the design review process to ensure compliance with applicable laws, ordinances, regulations, and standards. Conformance with the applicable design codes and policies will be enforced during the city design review process.

Conclusion

Less Than Significant with Mitigation Incorporated. With the implementation of the efficiency measures to be incorporated into the project and mitigation measures **GHG-2** and **GHG-3**, 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: If the Bay Area Air Quality Management District (BAAQMD) has adopted a new threshold of significance for stationary sources on or before CA3 receives its Authority to Construct permit, the project shall reduce the time the engines operate for readiness testing and maintenance on an annual basis to ensure the project complies with the new limit. Prior to the start of operation, the project owner shall provide a report to the director, or director's designee, of the city of Santa Clara Community Development Department ~~Planning Division~~ describing how the project intends to comply with the limit, including a proposed schedule of readiness testing and maintenance operations for the year. The project owner shall provide an annual report thereafter to the director, or director's designee, of the city of Santa Clara Planning Division describing all operations of the facility that occurred for readiness testing and maintenance and calculating the attendant GHG emissions that resulted for the year.

GHG-2: The project owner shall use renewable diesel as the primary fuel for the emergency backup generators to the maximum extent feasible, and only use ultra-low sulfur diesel (ULSD) as a secondary fuel in the event of supply challenges or disruption in obtaining renewable diesel. If testing confirms that use of this fuel will not result in emissions that would cause the project to exceed applicable thresholds after any available mitigation for such emissions has been applied, the project owner shall ensure that renewable fuels are used for a minimum of at least 44 percent of total energy use by the emergency backup generators by December 31, 2024; 52 percent by December 31, 2027;

and 60 percent by December 31, 2030. Renewable fuels shall be used for 100 percent of total energy use by the emergency backup generators by December 31, 2045. 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 Electric Utility Department ~~Planning Division~~ demonstrating compliance with the mitigation measure.

GHG-3: The project owner shall ensure that 100 percent of the electricity purchased to power the project is covered by carbon-free resources using one of the following options: (1) participate in Silicon Valley Power (SVP) Large Customer Renewable Energy (LCRE) Program or other renewable energy program that accomplishes the same objective as 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 (2) purchase ~~carbon offsets~~ renewable energy credits or similar instruments that accomplish the same goals of 100 percent carbon-free electricity. The project owner shall provide documentation to the director, or director's designee, of the city of Santa Clara Electric Utility Department ~~Planning Division~~ of enrollment and annual reporting of continued participation in SVP's LCRE Program with 100 percent carbon-free electricity coverage. If not enrolled in SVP's LCRE Program, the project owner shall provide documentation and annual reporting to the director, or director's designee, of the city of Santa Clara Electric Utility Department ~~Planning Division~~ that confirms that alternative measures achieve the same 100 percent carbon free electricity as SVP's LCRE Program, with verification by a qualified third-party auditor specializing in greenhouse gas emissions.

4.8.5 References

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4.9 Hazards and Hazardous Materials

This section describes the environmental and regulatory setting and discusses impacts specific to hazards and hazardous materials associated with the construction and operation of the project.

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 Waste and Substances Sites

The project owner hired TRC Solutions, Inc. (TRC) to conduct a Phase 1 Environmental Site Assessment (ESA) and to determine the location of hazardous wastes and hazardous material release sites within 0.25 mile of the project. The analysis provided by TRC included within the Phase 1 ESA a search through Environmental Data Resources, Inc (EDR) a proprietary database related to generation, storage, handling, transportation,

treatment of wastes, and the remediation of contaminated soil and groundwater sites. TRC 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 1939, the eastern portion of the project site was covered by agricultural orchards and the western portion of the project was undeveloped. Based on an aerial photograph, the project site conditions remained consistent through 1968. In 1974, the eastern portion of the project site was completely cleared of all agricultural orchards and remained undeveloped land. In 1982, the project site had been redeveloped as a commercial property with only one building located on the site. Currently, the project site is leased by Mia Sole for operation as a solar panel manufacturing facility (CA3 2021b).

In 2020, TRC completed a Phase II ESA to evaluate the presence of potential contaminants in soil and soil vapor from past uses at the project site. TRC conducted a limited subsurface investigation that included sixteen soil samples and five soil vapor samples to evaluate the current subsurface conditions. In the soil samples collected, low levels of petroleum hydrocarbons and fuel-related volatile organic compounds (VOCs) were detected at levels less than their residential screening criteria. Several organochlorine pesticides dichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), dichlorodiphenyltrichloroethane (DDT), dieldrin, and endosulfan II were detected at levels less than their residential screening. Lead was also detected in several soil samples at levels less than their residential screening criteria. Heavy metals (cobalt and nickel) were detected in some soil samples at concentrations exceeding the toxicity-based screening levels, but below regional natural background concentrations. Arsenic concentrations exceeded the toxicity-based screening levels and regional natural background concentrations. Elevated concentration of lead and arsenic were detected at the greatest frequency and magnitude in the soil samples likely associated with the prior agricultural uses of the property.

Soil vapor detections included fuel-related VOCs and chlorinated solvents. However, all the detections were below the most stringent (i.e., residential land use) screening criteria published by the U.S. Environmental Protection Agency and the California Environmental Protection Agency for evaluation of vapor intrusion risks, except for chloroform. Per the Phase II ESA, the source of the chloroform is unknown, but is often found as a laboratory contaminant. TRC stated the detected soil vapor concentrations do not represent a significant adverse impact to the planned commercial land use. In the event the project site is redeveloped for residential land use, additional evaluation of soil vapor conditions may be warranted.

Airports

The Norman Y. Mineta San Jose International Airport, a public airport, is approximately 1.75 miles west of the proposed project and has two runways that exceed 3,200 feet in length (Air Nav 2019). The Santa Clara County Airport Land Use Commission Plan (CLUP) shows that the proposed project does not fall within any Airport Safety Zone. The project's Federal Aviation Regulations (FAR) Part 77 (obstruction) surface is 212 feet above mean sea level (AMSL), as identified in Figure 6 of the Comprehensive Land Use Plan for San Jose International Airport (SCCALUC 2016).

Schools

The Bracher Elementary School, a public school, is approximately 0.25 miles west of the proposed project site.

Emergency Evacuation Routes

The Santa Clara Local Hazard Mitigation Plan (Santa Clara County 2017) identifies hazards and provides a risk assessment for the potential natural hazards, such as a flood, wildfire, or earthquake, that could impact the county. The plan does not identify any designated evacuation routes 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. State responsibility areas (SRAs) are locations where the State of California is responsible for wildland fire protection. Local responsibility areas (LRAs) are locations where the responding agency is the local county or city. The project site would be located within Santa Clara County.

The Cal Fire maps for Santa Clara County (CalFire 2007) indicate that the project site is in an LRA. Within the LRA, the project site falls within an un-zoned Fire Hazard Severity Zone that indicates that the project site has a less than moderate susceptibility to wildland fires. For more information on wildfire hazards, see **Section 4.19 Wildfire**.

Regulatory Background

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 United States Environmental Protection Agency (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.

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 C.F.R. §§ 171-177 and 350-399).

Federal Aviation Administration. Title 14, Part 77.9 of the Code of Federal Regulations requires Federal Aviation Administration (FAA) notification for any construction or alteration of navigable airspace exceeding 200 feet above ground level (AGL). 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 (CalEPA) created in 1991, unified California's environmental authority in a single cabinet-level agency and brought the California Air Resources Board (CARB), State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), Integrated Waste Management Board, DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies under the CalEPA "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. CalEPA 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 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. Employers are required to monitor worker exposure to listed hazardous substances and notify workers of exposure (Title 8, Cal. Code Regs., §§ 337 340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

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).

Local

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.

4.9.2 Environmental Impacts

a. 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. During the construction phase 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 due to the small quantities involved and their infrequent use, hence reduced chances of release. Temporary containment berms would also be used to help contain any spills during the construction of the project.

During construction, all 44 2.75 MW diesel generators fuel tanks would have to be filled. The transportation of the diesel fuel to the site would take many tanker trucks trips. Deliveries of diesel fuel during the project's operation would be scheduled on an as-needed basis resulting in four fuel tanker truck trips annually. 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 (DMV) regulations on hazardous cargo). The site contains no unique features that would prohibit existing regulations from serving as adequate mitigation; therefore, the transportation of diesel fuel would pose a less than significant risk to the surrounding public.

The routine transport use or disposal of hazardous materials would have a less than significant impact to the public or the environment.

Operation

Less Than Significant Impact. Diesel fuel would be used during routine testing and maintenance, and emergencies if they occurred. The 2.75 MW generator fuel tanks have an approximately 5,400-gallon diesel fuel storage tank that would only be filled to 95 percent capacity. Based on the maintenance and testing schedule, the average fuel consumption for each generator per month would be approximately 174 gallons of diesel fuel. These monthly tests would require each generator fuel tank to be refilled to 95 percent capacity approximately every 3 months (CA3 2021f).

The project 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. Commercial diesel fuels also contain biocides that prevent microbial growth and additives that help to stabilize the fuel for several months.

These Tier 4 diesel generators would use selective catalytic reduction (SCR) that injects a liquid-reductant through a special catalyst into the exhaust stream of the diesel engine. The reductant source would be called diesel exhaust fluid (DEF) which 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 (CA3 2021f). The replacement strategy is to contract with Valley Oil to either replenish the DEF supply by adding DEF from a bulk tanker truck to the existing 55-gallon DEF drum containers or replace old 55-gallon DEF drum containers with new (CA3 2021f).

The DEF consumption would vary depending upon the environment, operation, and duty cycle of equipment. Each generator enclosure is equipped with 110 gallons (two 55-gallon drums) of DEF. The maximum consumption of DEF per generator is 13 gallons per hour, resulting in 8 hours of generator run time. Based on the maintenance and testing schedule anticipated of 35 hours per year per generator, the upper bound of DEF consumption per generator would be 455 gallons per year. CA3DC replacement strategy is to have Valley Oil replenish the DEF supply by adding DEF from a bulk tanker truck or tank to the existing 55-gallon drums located inside the generator enclosure or replace the 55-gallon drums with new DEF (CA3 2021f). The DEF tank levels would be monitored and refilled as necessary.

With the above listed safety features and precautions, the risk to the off-site public or environment through the routine transport, use, or disposal of hazardous materials would have a less than significant impact.

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?

Construction

Less Than Significant Impact. As described under the discussion for impact criteria "a", project 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 criteria "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. Although a substantial quantity of diesel fuel would be stored on-site, its storage would be in a dedicated fuel tank beneath each 2.75 MW generator. The 2.75 MW generator fuel tank would hold a maximum of 5,100 gallons of diesel fuel (CA3 2021b).

Each generator's integrated fuel tank 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 engineering office that would alert personnel if a leak were detected in any of the inner tanks.

Deliveries of diesel fuel by tanker truck during the project's operation would be scheduled approximately every 3 months or on an as-needed basis. Diesel tanker trucks would use warning signs and/or wheel chocks in the loading/unloading areas to prevent the truck from moving before complete disconnection of the flexible or fixed transfer lines. An emergency pump shut-off would be available in case a pump hose breaks during the fueling of the tanks. In addition, a temporary spill catch basin would be located at each fill port for the generators during fueling events. During fueling events, storm drains will be temporarily blocked off by the truck driver and/or facility staff (CA3 2021b).

For the above listed safety features and precautions, the risk to the off-site public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials would have a less than significant impact.

c. 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 with Mitigation Incorporated. The Bracher Elementary school is approximately one-quarter mile south of the project site. As described under the discussion for impact criteria "a", project construction would require the limited use of hazardous materials which would be stored, handled, and used in accordance with applicable local, state, and federal regulations. Any impacts resulting from spills or other accidental releases of these materials would be limited to the site due to the small quantities involved and their infrequent use. In addition, ground disturbing activities associated with the grading and construction activities of the project would have the potential to encounter contaminated soil. The applicant proposed measure **HAZ-1** would require a site mitigation plan (SMP) to be created to establish proper procedures to be taken when contaminated soil is found and how to dispose of the contaminated soil properly. If contaminated soils are found in concentrations above thresholds, the project would halt construction and the soil would be treated in place or removed to an

appropriate disposal facility. For the above listed safety measures and with implementation of **HAZ-1**, the construction of the project would create a less than significant impact to the public or the environment.

Operation

Less Than Significant Impact. As described in the impact criteria "b", the project would store large amounts of diesel fuel on site. However as discussed in impact criteria "b", with the listed safety features and precautions, the risk to the off-site public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials would have a less than significant impact.

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?

Construction

Less Than Significant Impact with Mitigation Incorporated. According to a review of the Envirostor and GeoTracker databases, the project site does not have any known, open cases on the hazardous materials sites compiled pursuant to Government Code section 65962.5. The site was originally covered by agricultural orchards and the western portion of the project was undeveloped. In 1982, the project site had been redeveloped as a commercial property with only one building located on the site. Currently, the project site is leased by Mia Sole for operation as a solar panel manufacturing facility (CA3 2021b). TRC's limited subsurface investigation conducted during a Phase II ESA found heavy metals (cobalt and nickel) were detected in some soil samples at concentrations exceeding the toxicity-based screening levels, but below regional background concentrations. Arsenic concentrations exceeded the toxicity-based screening levels and regional background concentrations. Elevated concentration of lead and arsenic were detected at the greatest frequency and magnitude in the soil samples likely associated with the prior agricultural uses of the property. Soil vapor detections included fuel-related VOCs and chlorinated solvents that were below the most stringent screening criteria, except for chloroform. The source of the chloroform is unknown but is often found as a laboratory contaminant. However, the chloroform concentrations detected do not represent a significant adverse impact to the planned commercial land use.

Ground disturbing activities associated with the grading and construction activities of the project would have the potential to encounter impacted groundwater and/or soil. The contaminated soils could contain organochlorine pesticides, heavy metals, and VOC's. The applicant proposed measure **HAZ-1** would require a SMP to be created. The SMP would establish proper procedures to be taken when groundwater and contaminated soil is found and how to dispose of the contaminated soil properly. In addition, if contaminated soils are found in concentrations above thresholds, the project would halt construction and the soil would be treated in place or removed to an appropriate disposal facility. With

the implementation of **HAZ-1**, the construction of the project would create a less than significant impact to the public or the environment.

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 project site is approximately 1.75 miles southeast of the Norman Y. Mineta San Jose International Airport. The FAA establishes a maximum structure height of 212 feet AMSL at the project site (SCCALUC 2016). Even when accounting for the 48.8-foot AMSL finished floor elevation of the project site, the CA3DC, at 108.4 feet AGL and therefore 157.2 feet AMSL, would not exceed the FAA's obstruction surface of 212 AMSL.

The project site is still subject to Title 14, Part 77.9 of the Code of Federal Regulations, Construction or Alteration Requiring Notice. With a maximum project height of 108.4 feet AGL, the project would exceed the FAA notification 100:1 surface threshold of 92.4 feet at the project site. On August 23, 2021, the project applicant submitted Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA for review (CA3 2021g). Because the project's tallest structure would be far below the project site's FAR Part 77 (obstruction) surface of 212 feet AMSL, as identified in Figure 6 of the Comprehensive Land Use Plan for San Jose International Airport, staff anticipates the FAA issuing a Determination of No Hazard for CA3DC. Therefore, the project would not pose a safety hazard and would have a less than significant impact.

The project site does not fall within any Airport Safety zone, as identified in Figure 7 of the Comprehensive Land Use Plan for San Jose International Airport (SCCALUC 2016). Therefore, the project would not pose a safety hazard and would have a less than significant impact. 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

No 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. In addition, the thermal plume generated by the project would not pose a safety hazard to any aircraft near the Norman Y. Mineta San Jose International Airport., as described in a more detailed analysis in **Section 4.17 Transportation.**

f. 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. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Construction and Operation

No Impact. The project site is in Santa Clara County. It is within an un-zoned Fire Hazard Severity Zone, within an LRA, indicating that the project site has a less than moderate susceptibility to wildland fires. The project site is not adjacent to wildlands. The project site is currently developed with one one-story commercial building. The project area consists primarily of commercial and industrial land uses to the north and east and residential uses to the south and west. Although equipment and vehicles used during construction, as well as welding activities, have the potential to ignite dry vegetation, the project is within an urban area and is surrounded by commercial buildings that have very limited dry vegetation. In addition, the project is within an un-zoned fire hazard area. Therefore, there would be no impact from wildland fires resulting from construction activities related to the project.

4.9.3 Mitigation Measures

The following design measure (Proposed Design) is proposed to be incorporated as part of the project to mitigate potential impacts to less than significant levels. (CA3 2021b).

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

- Prior to the issuance of grading permits, shallow soil samples shall be taken in areas where soil disturbance is anticipated to determine if contaminated soils with concentrations above established construction/trench worker thresholds may be present due to historical agricultural use and from historical leaks and spills. The soil sampling plan must be reviewed and approved by the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division prior to initiation of work. Once the soil sampling analysis is complete, a report of the findings will be provided to the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division and other applicable City staff for review.
- Documentation of the results of the soil sampling shall be submitted to and reviewed by the City of Santa Clara prior to the issuance of a grading permit. Any soil with concentrations above applicable environmental screening levels or hazardous waste limits would be characterized, removed, and disposed of off-site at an appropriate landfill according to all state and federal requirements.
- A Site Management Plan (SMP) will be prepared to establish management practices for handling impacted groundwater and/or soil material that may be encountered during site development and soil-disturbing activities. Components of the SMP will include:
    - a detailed discussion of the site background.
    - a summary of the analytical results.
    - preparation of a Health and Safety Plan by an industrial hygienist.
    - protocols for conducting earthwork activities in areas where impacted soil and/or groundwater are present or suspected.
    - worker training requirements, health and safety measures and soil handing procedures shall be described.
    - protocols shall be prepared to characterize/profile soil suspected of being contaminated so that appropriate mitigation, disposal, or reuse alternatives, if necessary, can be implemented.
    - notification procedures if previously undiscovered significantly impacted soil or groundwater is encountered during construction.
    - notification procedures if previously unidentified hazardous materials, hazardous waste, underground storage tanks are encountered during construction.

- on-site soil reuse guidelines.
- sampling and laboratory analyses of excess soil requiring disposal at an appropriate off-site waste disposal facility.
- soil stockpiling protocols; and
- protocols to manage groundwater that may be encountered during trenching and/or subsurface excavation activities. Prior to issuance of grading permits, a copy of the SMP must be approved by the Santa Clara County Environmental Health Department, and the Santa Clara Fire Department Fire Prevention and Hazardous Materials Division. Prior to issuance of grading permits, a copy of the SMP must be approved by the Santa Clara County Environmental Health Department, and the Santa Clara Planning Division.

If contaminated soils are found in concentrations above risk-based thresholds pursuant to the terms of the SMP, remedial actions and/or mitigation measures will be taken to reduce concentrations of contaminants to levels deemed appropriate by the selected regulatory oversight agency for ongoing site uses. Any contaminated soils found in concentrations above thresholds to be determined in coordination with regulatory agencies shall be either 1) managed or treated in place, if deemed appropriate by the oversight agency or 2) removed and disposed of at an appropriate disposal facility according to California Hazardous Waste Regulations (CCR, tit. 22, div. 4.5) and applicable local, state, and federal laws.

4.9.4 References

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CalFire 2007 – California Department of Forestry and Fire Protection (CalFire). 2007 Santa Clara County – Very High Fire Hazard Severity Zones in State Responsibility Area. Available online at: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/

DTSC 2018 – Department of Toxic Substances Control (DTSC). Envirostor Database. Available online at: http://www.envirostor.dtsc.ca.gov/public/ Accessed on: August 3, 2021

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SWRCB 2018 – State Water Resources Control Board (SWRCB). GeoTracker Database. Available online at: http://geotracker.waterboards.ca.gov. Accessed on: August 3, 2021

CA3 2021a – Application for Small Power Plant Exemption: VDC CA3 Backup Generating Facility, Part I, dated April 2021. (TN 237380). Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=237380&DocumentContentId=70567

CA3 2021b – Application for Small Power Plant Exemption: VDC CA3 Backup Generating Facility, Part II, dated April 2021. (TN 237423). Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=237423&DocumentContentId=70609

CA3 2021c – Application for Small Power Plant Exemption: VDC CA3 Backup Generating Facility, Part III, dated April 2021. (TN 237381). Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=237381&DocumentContentId=70569

CA3 2021d – Application for Small Power Plant Exemption: VDC CA3 Backup Generating Facility, Part IV, dated April 2021. (TN 237382). Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=237382&DocumentContentId=70570

CA3 2021e – Application for Small Power Plant Exemption: VDC CA3 Backup Generating Facility, Part V, dated April 2021. (TN 237383). Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=237383&DocumentContentId=70571

CA3 2021f – Response to CEC staff data request set 1 Part I, VDC CA3 Backup Generating Facility (21-SPPE-01), June 2021 (TN 238215). Available online at: https://efiling.energaCy.ca.gov/GetDocument.aspx?tn=238215&DocumentContentId=71489

CA3 2021g – Response to CEC staff data request set 3, VDC CA3 Backup Generating Facility (21-SPPE-01), June 2021 (TN 239485). Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=239485&DocumentContentId=72949

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 storm water 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 Setting

Storm Drainage and Water Quality

The project would be constructed in the city of Santa Clara, within the Guadalupe watershed. The Guadalupe watershed drains to the San Francisco Bay, located a few miles northwest of the proposed project site. The site is located west of San Tomas Aquino Creek and the Guadalupe River. Storm water from the project site drains into the city of Santa Clara's storm water drain system along Walsh Avenue, which

discharges to Guadalupe River and ultimately to San Francisco Bay.

The water quality of San Tomas Aquino Creek and other creeks is influenced by pollutants contained in storm water runoff. Storm water runoff from urban areas typically contains pollutants such as sediment, metals, pesticides, herbicides, oil, grease, asbestos, lead, and animal wastes.

Since the site is currently developed with a single story 115,000-square-foot office building and associated paved parking and loading dock areas, the site is generally impervious. The proposed project would consist of construction of a four-story data center building with 469,482 square feet of floor space, a utility substation, a generator equipment yard, a parking lot and landscaping, and a recycled water pipeline. The site is approximately 6.7 acres in size.

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.

Fluctuations in rainfall, changing drainage patterns, and other hydrologic factors can influence groundwater levels. Based on the Seismic Hazard Zone Report 051 prepared by the Department of Conservation for the San Jose West 7.5-Minute Quadrangle, the historic shallowest observed depth to groundwater in the general site area was about 10 feet below ground surface (bgs) (CGS 2002).

The project site and surrounding areas have historically been used for industrial purposes. Though the site does not have any open contamination investigations shown on the Department of Toxic Substances Control's Envirostor website, site contamination is possible.

Flooding

The average elevation of the existing project site is approximately 40-50 feet above the 1988 North American Vertical Datum (NAVD88) (USGS 2018). According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) 06085C0226H, effective May 18, 2009, the project site is located within Zone X. Zone X is defined as areas of 0.2 percent annual chance of flood (or a 500-year flood), areas of 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, and areas protected by levees from one percent annual chance of flood.

The project site is also not within an area mapped as vulnerable to sea level rise in the National Oceanic and Atmospheric Administration's Digital Coast, Sea Level Rise Viewer (NOAA 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 Regional Water Quality Control Boards (RWQCB) 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 pollutant that can be assimilated by a water body without violating water quality standards. Listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses; rather, the intent is to identify the water body as requiring future development of a TMDL to maintain water quality and reduce the potential for future water quality degradation.

The San Francisco Bay RWQCB issued a Municipal Regional Storm Water NPDES Permit (Permit Number CAS612008) that requires the city of Santa Clara to implement a storm water 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 storm water treatment controls to treat post-construction storm water 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 if they do not meet the size threshold, drain into tidally influenced areas or directly into the Bay, drain into hardened channels, or are infill projects in subwatersheds or catchment areas that are at least 65 percent impervious (per the city of Santa Clara Hydromodification Management Applicability Map). 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 magnitude of flood used nationwide as the standard for floodplain management is a flood having a probability of occurrence of one percent in any given year. This 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 (SGMA) 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 Santa Clara Valley Water District (SCVWD) is the exclusive GSA for the Santa Clara Valley groundwater Subbasin, which contains the proposed project. 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, Prevention of Flood Damage. Chapter 15.45 of the Santa Clara city code requires that buildings' lowest floor be constructed at least as high as the base flood elevation.

4.10.2 Environmental Impacts

a. Would the project violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction and Operation

Less Than Significant Impact. The proposed project would disturb about 6.7 acres of land and would be subject to construction-related storm water permit requirements of California's NPDES General Permit for Storm Water 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 preparation of a Storm Water Pollution Prevention Plan (SWPPP). With implementation of the construction SWPPP, redevelopment of the site would not cause a substantial degradation in the

quality, or an increase in the rate or volume, of storm water runoff from the site during construction. In addition, the Municipal NPDES permit, as well as the SCVURPPP, requires that redevelopment not result in a substantial net increase in storm water flow exiting the project site during operation. As a result, runoff from the project site would not be expected to exceed the capacity of the local drainage system or to significantly contribute to the degradation of storm water runoff quality.

It is possible that up to 10,000 cubic yards of soil would be removed from the site during construction and it is therefore possible to encounter groundwater and make dewatering necessary. If dewatering is necessary, and the discharge is found to be contaminated, the project owner would likely be required to obtain coverage under the VOC and Fuel General Permit (San Francisco RWQCB General Order No. R2-2017-0048 NPDES Permit No. CAG912002). Discharge of uncontaminated water from the dewatering operation to waters of the US within the San Francisco RWQCB's jurisdiction is a permitted activity under the Construction General Permit.

Thus, 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?

Construction and Operation

Less Than Significant Impact. Since the project would be in an area served with imported surface water from the San Francisco Public Utilities Commission (SFPUC), the water supply to the project would not likely be from a groundwater source. The city's Urban Water Management Plan (UWMP) for 2020 shows that the city 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 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 specified in the interruptible contract between the city and SFPUC are met (UWMP 2020). If supply from SFPUC is interrupted, the city would have to 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 (UWMP 2020). As discussed in **Section 4.18, Utilities and Service Systems**, the project does not meet the definition of a "project" for the purposes of preparing a Water Supply Assessment (WSA) by the water supplier. The project is similar

to the Walsh Data Center (exempted by the Energy Commission in August 2020) in terms of total square footage but is expected to use less water. The city of Santa Clara determined that the Walsh Data Center project did not require a WSA, so a similar determination would be expected for the CA3 Data Center project (Walsh 2019b, Appendix E). 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*;*

Construction, Operation, and Maintenance

Less Than Significant Impact. The existing site is nearly completely covered with impervious surfaces and includes storm water collection and disposal facilities throughout the parcel. The proposed project would result in a reduction in impervious areas (by replacing some of the existing impervious areas with pervious ones for landscaping) and would also include a new storm water collection system that would incorporate source control and treatment best management practices (BMPs). These BMP's 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 storm water design is expected to comply with the BMP's well, by implementing measures to ensure the project would not result in a substantial net increase in storm water 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;

Construction and Operation

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 storm water drainage systems or provide substantial additional sources of polluted runoff; or

Construction and Operation

Less Than Significant Impact. The proposed project would result in a reduction in impervious areas and would also include a new storm water 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?

Construction and Operation

Less Than Significant Impact. Though the site is located near the Guadalupe River and San Tomas Aquino Creek, these waterways do not pose a likely flood risk. According to FIRM 06085C0226H, effective May 18, 2009, 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 National Oceanic and Atmospheric Administration's Digital Coast, Sea Level Rise Viewer (NOAA 2021).

The proposed project also would not be expected to add significantly to the existing potential of the site to impede flood flows. The proposed project would have significant structures, like the existing site did, that would similarly impede or redirect flood flows. Therefore, no net change in obstruction is expected from the proposed 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?

Construction and Operation

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 National Oceanic and Atmospheric Administration's Digital Coast, Sea Level Rise Viewer (NOAA 2021).

The project site is not located near a large body of water, the ocean, or steep slopes. Due to the location of the proposed project site, it would not be subject to inundation by seiche, tsunami, or mudflow (CEMA 2009).

The project site is within the inundation zones of two upstream reservoirs. 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, release of on-site pollutants would be prevented by the SWPPP, Worker Environmental Training, a Spill Prevention, Control, and Countermeasure Plan, a Hazardous Materials Business Plan, and through an emergency spill response

program. All of these measures would work together to help keep potential pollutants properly contained. Therefore, the impacts would be less than significant.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Construction and Operation

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 specified in the interruptible contract between the city and SFPUC are met (UWMP 2020). 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 (UWMP 2020). The proposed 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.

4.10.4 References

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4.11 Land Use and Planning

This section describes the environmental setting and regulatory background and discusses impacts associated with the construction and operation of the project specific to land use and planning.

LAND USE AND PLANNING Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Environmental checklist established by CEQA Guidelines, Appendix G.

4.11.1 Environmental Setting

The project site is located within one of the city of Santa Clara's (city) primary employment centers that extends south of U.S. Highway 101 and north of the Caltrain corridor. Land use classifications within this employment center region primarily include Light/Heavy Industrial and Office/Research and Development uses (Santa Clara 2021a). The project would utilize a 6.69-acre site (APN 216-28-112) that is zoned Light Industrial (ML) and is currently developed with a 115,000-square-foot office and warehouse building. Land uses that surround the project site include the following (Santa Clara 2021a):

- North-northeast of project site: Vantage Santa Clara Data Center Campus CA1 at 2625 Walsh Avenue (ML zoning district);
- East-southeast of project site: existing ML uses (software development and telecommunications equipment supplier) at 2550 Walsh Avenue (ML zoning district);
- South-southwest of project site: Caltrain corridor along the project site's southern boundary, which separates the project site from Medium-Density Residential development located approximately 150 feet south of the project;
- West of project site: Silicon Valley Power's (SVP) Uranium Substation at 2747 Bowers Avenue (Public or Quasi-Public zoning district);
- Northwest of project site: KeyPoint Credit Union at 2805 Bowers Avenue (ML zoning district); and
- North-northwest of project site: existing Office/Research and Development uses at 2630 Walsh Avenue (ML zoning district).

The Norman Y. Mineta San Jose International Airport (San Jose International Airport) is located approximately 1.75 miles east of the project site. Per the Comprehensive Land Use Plan for the San Jose International Airport, the project site is outside of the Airport Influence Area (Santa Clara County 2016).

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 2010-2035 General Plan. The project would be in an area of the city between U.S. Highway 101 and the Caltrain corridor that has been designated in the City of Santa Clara 2010-2035 General Plan (general plan) as primarily industrial (Santa Clara 2010). The city's industrial land use designation is used to identify areas that serve as major employment centers for the city. Industrial land use designations are located away from sensitive receptors to prevent their exposure to hazardous materials commonly used in manufacturing and warehousing. Data centers are identified as a light industrial land use (Santa Clara 2010).

Section 5.3.5 of the general plan contains the following policies that pertain to industrial land uses and are applicable to the project:

- 5.3.5-P6 – Encourage innovative design of new office space to promote higher-intensity new development and on-site expansion of existing uses.
- 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.
- 5.3.5-P14 – Prohibit Data Centers from properties designated High Intensity Office/Research and Development except as support to the primary use on the property.

Section 5.9 of the general plan contains the following public facilities policy that is applicable to the proposed on-site switching station.

- 5.9.2-P9 – Prohibit new public and quasi-public facilities on land designated for Light or Heavy Industrial uses on the Land Use Diagram (general plan figure 5.2-1), excluding public utility facilities.

Floor area ratio (FAR) of a development is the total square footage of a building(s) on a lot divided by the total lot area. The general plan identifies an FAR of 0.6 for a light industrial land use. However, Section 5.5.1 of the general plan contains the following

discretionary use policy that provides flexibility in the density of specific land uses, such as a data center, provided that the permitted land use supports the General Plan's Major Strategies.

- 5.5.1-P9 – For Data Centers on Light or Heavy Industrial designated properties, allow a 20 percent increase in the maximum allowed non-residential square-footage, provided that sufficient onsite land area is available to meet the parking requirements for other uses allowed under those designations, and provided that the increased intensity is compatible with planned uses on neighboring properties and consistent with other applicable General Plan policies.

City of Santa Clara Zoning Code. The entire project site is within an ML zoning district, which "is intended to provide an optimum general industrial environment, and it is intended to accommodate industries operating substantially within an enclosed building" (city of Santa Clara 2021b).

Permitted Uses: Permitted uses within an ML zoning district include the following (City Code Section 18.48.030):

- Plants and facilities for the assembly, compounding, manufacture, packaging, processing, repairing, or treatment of equipment, materials, merchandise, or products.
- Incidental and accessory buildings, storage buildings, outdoor storage, warehouses, exposed mechanical appurtenances, and the like, that comprise less than 25% of the total lot area and are shielded from public view.

Development Standards: The following development standards are applicable to the ML zoning district:

- Building Height Limits – Maximum permitted height within an ML zoning district shall not exceed 70 feet (City Code Section 18.48.070). Height requirements shall also be subject to the following additional requirements, conditions, and exceptions (City Code Section 18.64.010):

  (a) 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.

  (b) The height limitations shall not apply to flagpoles, sculpture, antennas, and radio towers; provided, that the same may be safely erected and maintained at such a height with respect to the surrounding conditions and circumstances.

- Maximum Building Coverage – The maximum building coverage within an ML zoning district is 75%, subject to required parking, landscaping, and setback (City Code Section 18.48.110).

  Front yard – Each lot shall have a street side front yard of not less than 15 feet in depth (City Code Section 18.48.080).

Side yards – Side yards are required for every lot that is adjacent to a residentially zoned property or property designated as residential in the general plan. Each such side yard shall be not less than ten feet in width (City Code Section 18.48.090).

Rear yard – A rear yard is required for each portion of a lot that is adjacent at rear of lot to a residentially zoned property or property designated as residential in the general plan. Such rear yard shall be not less than ten feet in depth (City Code Section 18.48.100).

- Outdoor Storage and Exposed Mechanical Equipment – Outdoor storage and exposed mechanical equipment shall not exceed six feet in height within the first six 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 feet. Height of mechanical equipment and any accompanying screening shall be subject to Director of Community Development approval (City Code Section 18.48.140).

The city's Zoning Administrator has the authority to grant a minor modification to height, area, and yard regulations, provided that the minor modification does not exceed 25% of any zoning requirement (City Code Section 18.90.020). If a project were to exceed a 25% threshold of any zoning requirement, the project would require variance approval by the Planning Commission at a noticed public hearing (City Code Chapter 18.108).

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 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 outside of the Airport Influence Area, which is a "composite of the areas surrounding the Airport that are affected by noise, height, and safety considerations" (Santa Clara County 2016). The CLUP policies regarding land use and planning do not apply to the project. Therefore, the Land Use and Planning analysis contains no further discussion of the CLUP for the San Jose International Airport.

4.11.2 Environmental Impacts

a. Would the project physically divide an established community?

Construction and Operation

No Impact. The project would be constructed and operated on a single parcel of land that was previously developed for an industrial use. The project would demolish the existing on-site building and construct and operate a new industrial use on the same site. The parcel boundaries would remain the same. The project would not introduce a new barrier or otherwise restrict public access within the community. Neither project construction nor operation activities would physically divide an established community, and 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, the construction and operation of the project would not conflict with applicable land use plans or policies such that significant environmental impacts would occur. Impacts would be less than significant.

City of Santa Clara General Plan. The project site has a general plan land use designation of ML, which "allows 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 2010). The proposed project is an allowable use in areas designated ML.

As described below, the project is also consistent with industrial land use policies applicable to the project:

- Policy 5.3.5-P6 – The project would increase the intensity (i.e., building mass and height) of the existing industrial land use onsite by replacing a single-story 115,000-square-foot building with a four-story 468,170-square-foot building to accommodate the proposed project. As this policy promotes higher intensity of new development and on-site expansion of existing uses, the project would be consistent with this policy.
- Policies 5.3.5-P12 and 5.3.5-P14 – The project would construct a data center within a light industrial land use designation and would, therefore, be consistent with these policies.
- Policy 5.9.2-P9 – The proposed project would include construction of a new, on-site switching station that would be owned and operated by SVP. As a public utility facility, the switching station would not conflict with the site's ML land use designation.

Staff calculated the proposed project's FAR to be 1.61,[1] which exceeds the general plan's maximum FAR of 0.6 for an ML land use designation. Staff spoke with city of Santa Clara Associate Planner Debby Fernandez, who explained that the FAR exceedance would be allowed for a data center as it would be considered a very low employee trip generating use (CEC 2021j). Daily operations at the proposed data center would not conflict with ongoing operations at neighboring properties as the anticipated average number of persons per shift would be no more than 30 employees. To provide sufficient parking for data center operations, the proposed project site would include 30 parking spaces, while

1 The proposed project's building square footage is 468,170 square feet (sq. ft.). The lot area is 6.69 acres, or 291,416 sq. ft. The FAR of a development is the total building square footage divided by the total lot area.

an additional 96 parking places would be provided across Walsh Avenue on the applicant's existing CA1 campus (DayZenLLC 2021bb).

The proposed project is in an identified employment center area that is targeted for intensification of industrial, research, and development uses within the city (Santa Clara 2010). In addition, the proposed project site is in a ML zone. The properties surrounding the proposed project to the north, east, and west are similarly zoned ML, and are developed with compatible uses (i.e., CA1 data center, research and development facility, software development and telecommunications equipment supplier, and a credit union). The Caltrain corridor that is located along the proposed project's southern boundary is not directly accessible via the project site and would not be affected by an increase in the site's land use intensity. Because the proposed project is consistent with the general plan and zoning for the existing industrial site and surrounding area and is consistent with the city's intent for development within the area, the project's increase in intensity over existing conditions would not conflict with the operations of the similar existing industrial land uses on neighboring properties. Therefore, the impact would be less than significant.

City of Santa Clara Zoning Code.

- Building height limits – The height of the proposed data center building would be 87.5 feet from the grade to the highest point of the parapet coping of the flat roof (DayZenLLC 2021z). While this height exceeds the maximum permitted height of 70 feet within an ML zoning district (City Code Section 18.48.070), the city's Zoning Administrator has the authority to grant a minor modification in the permitted height provided that the height does not exceed 25% of the zoning requirement, which would be 87.5 feet within an ML zone (City Code Section 18.90.020). Staff spoke with city of Santa Clara Associate Planner Debby Fernandez, who confirmed that the height requirements would not apply to the proposed mechanical equipment to be placed on the project's rooftop (CEC 2021j). Therefore, the proposed project's height of 87.5 feet would not exceed 25% of the zoning requirement. To obtain a minor modification, the applicant must submit an application to the Zoning Administrator accompanied by plans and elevations necessary to show the detail of the proposed modification to the satisfaction of the Zoning Administrator. The proposed project is currently under review by the city of Santa Clara's project clearance committee, and the applicant will submit any additional application forms, plans, and elevations required by the Zoning Administrator in order to grant a minor modification for the project. Upon issuance of the city's minor modification, the project would not conflict with the height restrictions within an ML zone.
- Maximum building coverage – To comply with the ML zone requirement for a 15-foot landscaped front yard setback, the applicant submitted a revised site plan for the proposed project on July 22, 2021 (DayZenLLC 2021b). City of Santa Clara Associate Planner Debby Fernandez confirmed to staff that the revised site plan would be consistent with the front yard setback requirement (CEC 2021s).
- Exposed Mechanical Equipment – The project's proposed substation would be partially surrounded by a 13-foot-high masonry wall, with the remainder of the substation

enclosed within an eight-foot-high chain link fence. The generator yard would be enclosed within a 25-foot-high perforated metal screen wall along its north, east, and west sides. Per the requirements of City Code Section 18.48.140, the height of mechanical equipment and any accompanying screening shall be subject to Director of Community Development approval. The Architectural Review process would ensure that screening of the generator yard and the substation would conform with ML zoning standards.

4.11.3 Mitigation Measures

None.

4.11.4 References

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Santa Clara 2021a – City of Santa Clara (Santa Clara). Interactive. Amended February 23, 2021. Accessed on: July 6, 2021. Available online at https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/zoning

Santa Clara 2021b – City of Santa Clara (Santa Clara). Santa Clara City Code. Current through Ordinance 2029, passed February 23, 2021. Accessed on July 7, 2021. Available online at: https://www.codepublishing.com/CA/SantaClara/#!/SantaClaraNT.html

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DayZenLLC 2021b – DayZenLLC (DayZenLLC) – (TN 238970). VDC Initial Responses to CEC Data Request Set 2-CA3BGF, dated July 22, 2021. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-SPPE-01

DayZenLLC 2021z – DayZenLLC (DayZenLLC). (TN240157). CA3DC PPC Drawing Set Rev3 – Part II, dated October 28, 2021. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-SPPE-01

DayZenLLC 2021bb – DayZenLLC (DayZenLLC). (TN 240159). CA3DC Revised Project Description – PCC Revisions, dated October 28, 2021. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-SPPE-01

Santa Clara County 2016 – Norman Y. Mineta San Jose International Airport Comprehensive Land Use Plan for Santa Clara County. Figure 6 and Figure 8. Adopted by Santa Clara County Airport Land Use Commission, San Jose, CA, May 25, 2011; amended November 16, 2016. Accessed on July 6, 2021. Available online at: https://plandev.sccgov.org/commissions-other-meetings/airport-land-use-commission

4.12 Mineral Resources

This section describes the environmental and regulatory setting 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 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 (DayZenLLC 2021), 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. Other than the Communication Hill Area, located about 10 miles southeast of the project site, which contains mineral deposits that are of regional significance as a source of constriction aggregate materials, the city of Santa Clara does not have mineral deposits as defined by to the California Surface Mining and Reclamation Act of 1975 (SMARA) (DOC 2016). The Division of Mine Reclamation's list of mines, referred to as the Assembly Bill (AB) 3098 List and regulated under SMARA, identifies four other facilities in Santa Clara County, the closest being the Lexington Quarry (mine ID: 91-43-0006), located about 7.7 miles southwest of the project site (DOC 2016).

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 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 a developed urban area and 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 General Plan 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.

4.12.4 References

DayZenLLC 2021a – DayZenLLC (DayZenLLC). (TN 237380). VDC CA3BGF SPPE Application Part I, dated April 5, 2021. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-SPPE-01

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Aggregate Materials in the San Francisco-Monterey Bay Area: Classification of Aggregate Resource Areas: South San Francisco Bay Production-Consumption Region. Author: Melvin C. Stinson, Michael W. Manson and John J. Plappert (1987) Special Report 146. Accessed on: June 17, 2021. Available online at: https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc

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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 project site is zoned Light Industrial (ML) (DayZenLLC 2021e, Section 3.6). The area surrounding the project site consists of ML land uses to the north, east, and west. Approximately 150-200 feet to the south-southwest, the Caltrain corridor separates the project site from medium-density residential development. The nearest airport is Norman Y. Mineta San Jose International Airport approximately 1.75 miles east of the project site. The predominant long-term ambient noise sources are nearby and distant traffic, and by cooling and mechanical noise from various facilities. Additionally, noise events that interrupt the ambient noise are caused by trains and loud vehicles occasionally passing by (DayZenLLC 2021e, Section 4.13.2.3).

The applicant conducted noise surveys to characterize ambient noise in the areas surrounding the project site. One long-term, 24-hour survey was conducted from February 8 through February 9, 2021, at the southern boundary of the project site. This location represents the existing noise environment at the nearest residential receptor

directly across the CalTrain line (DayZenLLC 2021e, Section 4.13.2.3). The results of the survey provided average daytime and nighttime ambient noise levels at the residential receptors of approximately 59 and 53 dBA L_{eq}, respectively (DayZenLLC 2021d, Appendix F). The survey also provided the maximum noise level, L_{max}, of approximately 89 dBA at the residential receptor, primarily due to passing trains (DayZenLLC 2021d, Appendix F).

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 decibels on the A-weighted scale (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 impacts may occur. 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 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. 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 2010-2035General 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 2019). 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's exterior noise limit is 75 dBA (anytime) for heavy industrial land use zones, 70 dBA (anytime) for ML land use zones, 65 dBA daytime and 60 dBA 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

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 with Mitigation Incorporated. The City Code exempts construction activities from the established noise limits when activities occur during the daytime hours of 7:00 a.m. to 6:00 p.m. Monday through Friday and between 9:00 a.m. to 6:00 p.m. on Saturday (Santa Clara 2021). Two phases of construction activities would occur for a total of 22 months. Phase one would last for about 15 months which includes site work (demo, site prep. grading), construction of the entire building shell and substation, placement of half the generators. Phase two would last 7 months which includes interior buildout of the structure and placement of the other half of the generators. Construction activities for the project would likely utilize equipment that could generate noise levels that exceed ambient noise, such as bulldozers and jackhammers. 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. The loudest construction activities (from concrete saw or hydra break ram) can elevate ambient noise levels at the nearest residences by up to 11 dBA. However, noise levels from construction activities would be limited to daytime hours, in compliance with the City Code as discussed below. Additionally, the elevated noise levels from construction activities would be lower than the noise levels 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). This can elevate noise levels at residences by up to 30 dBA, intermittently resulting in noise levels as high as 89 dBA L_{max} compared to the existing daytime ambient level of 59 dBA L_{eq}.

As discussed above, 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 noise levels. An increase of 10 dBA corresponds to a doubling of loudness or dBA level and is the starting point for significant impacts. Again, the loudest construction activities can elevate the existing ambient noise levels at the nearest residences by up to 11 dBA—average of the loudest construction noise levels, causing noise levels up to 70 dBA compared to the existing daytime ambient level of 59 dBA L_{eq}. The noise levels from construction activities can be a perceived as noisy; however, less noisy than passing trains. Moreover, construction noise would not be heard by the residents to the south of the construction site when trains are passing by (noise levels from passing trains elevates noise levels by 30 dBA).

Two noise sources that produce noise levels that differ by 9 dBA or less can combine to produce an even louder noise level. However, if noise levels differ by 10 or more dBA, they do not combine to produce a louder noise level.

Moreover, performance standards (i.e., a complaint and redress process) are ultimately used as a backstop measure to address any impacts that might be perceived by the community. Therefore, staff proposes **NOI-1**, requiring a complaint and redress process be implemented to ensure construction noise impacts would not be significant, as perceived by the community. With the implementation of **NOI-1**, the project's construction noise impact 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 via Pacific Gas and Electric Company (PG&E) utility lines. The gensets would be enclosed in equipment yards located adjacent to the north 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. However, the City Code does not apply to the operation of the gensets during an emergency, such as the interruption of electricity delivered via PG&E.

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 44 gensets that would be located at the northern end of the project site, the opposite side of the data center building away from the nearby residents and would be housed in acoustically enhanced enclosures. Each genset would be tested only during daytime hours. An 8-foot-high by 200-foot-long wall along the northern property boundary would be installed to mitigate noise levels at adjacent 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, fitted with a "Superior" sound package, and solid barriers extending three feet above the top of the chiller fans. The substation would be surrounded by 15-foot-high walls (DayZenLLC 2021e, Section 4.13.3.1).

The applicant modeled sources of noise for the project using computer aided noise abatement (CadnaA) to assess the impact of its operational activities on nearby noise receptors. Noise modeling was performed for two scenarios: "normal" and "worst-case." Normal operation would primarily consist of the continuous operation of the HVAC equipment and other air-handling units.

The worst-case modeled scenario, under CadnaA, consists of the simultaneous operation of the project in normal mode along with 12 of the gensets closest to the nearest noise receptors. This scenario is only intended for modeling the worst-case noise impact on the adjacent properties and not the typical noise levels during testing and maintenance since the gensets would be tested one at a time. The noise generated during the worst-case scenario would be higher than that during testing and maintenance. The frequency of genset testing would be low (not to exceed 50 hours per engine per year) and testing would only occur during daytime hours (DayZenLLC 2021e, Section 4.6.3.1).

The CadnaA modeling results show that for the normal mode of operation, the noise level at the residential receptor would be anticipated to reach a maximum of 50 dBA L_{eq} (DayZenLLC 2021e, Table 4.13-9). This is below the daytime and nighttime ambient noise levels of 59 dBA and 53 dBA, respectively, at the nearby residential area. At the same location, the project's 50 dBA sound level is below the City Code daytime noise level limit of 55 dBA and does not exceed the City Code nighttime level of 50 dBA L_{eq}. The project's noise level at the nearby industrial receptor would not exceed 56 dBA L_{eq}. This is below the ambient level of 59 dBA L_{eq} at this location and below the City Code noise level limit of 70 dBA L_{eq} for ML uses (CA3 2021, Table 4.13-9).

The results of the CadnaA computer modeling also show that during the worst-case scenario, the modeled equivalent continuous sound level (L_{eq}) at the residential receptors would reach a maximum of 50 dBA. This is the same as normal operation because the gensets are located on the opposite side of the data center building, away from these residences. A 50 dBA noise level is below the daytime and nighttime ambient noise levels of 59 and 53 dBA, respectively. Additionally, it is below the City Code daytime residential noise level limit of 55 dBA L_{eq} and does not exceed the City Code nighttime limit of 50 dBA L_{eq}. Note that this would be due to emergency operation and is, therefore, exempt from the City Code noise limits. The project's noise level at the nearby industrial receptor would not exceed 70 dBA, the City Code limit for ML uses (DayZenLLC 2021e, Table 4.13-10).

In the unlikely event that actual noise emissions are higher than modeling predictions and additional improvements are needed to reduce project noise to acceptable levels (city's allowable limit or existing ambient noise level, whichever is higher), practical and available noise-reducing measures may need to be considered. Examples of measures typically implemented at data centers are listed below.

- Low speed fans.
- Acoustical building panels, tiles, and baffles: These are typically installed inside buildings to reduce internal noise levels.
- Sound dampening server cabinets: These are also used to reduce noise levels inside buildings.

The project would generate 13.2 daily vehicle miles traveled (VMT) per worker for project operations. This is below the city's threshold for VMT and as the permitting agency, the city would ensure project consistency with the General Plan policies related to trip reduction, transit connectivity, and alternative modes of transportation. Thus, the noise impact of vehicle trips associated with the project would be less than significant. See **Section 4.17 Transportation** for more discussion.

The noise impact from project operation would be less than significant.

Noise impacts from project construction and operation would not be in excess of adopted environmental standards or plans.

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). 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.

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 groundbourne vibrations at the immediate vicinity of the work area.

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 nearest structure to the project construction area is an existing ML building located approximately 60 feet southeast of the project site. A vibratory roller would be used during project construction for paving activities (DayZen LLC 2021e, Section 4.13.3.2). At the nearest noise receptors, the ML building, 0.21 in/sec translates to approximately 0.056 in/sec,[1] less than the threshold of human response to nearby residents or employees. Construction equipment and activities would be similar to those used at similar projects and are not expected to result in rates greater than those noted above. Staff therefore concludes that vibration impacts from project construction would be less than significant.

1 Calculated as: $PPV_{@distance} = PPV_{ref.\ equipment}$ x (ref. distance/distance)^1.5 = 0.21 x (25/60)^1.5 = 0.056 in/sec

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 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 Norman Y. Mineta San Jose International Airport, located approximately 1.75 miles east of the project site. The project site is located outside the Airport Noise Zone (the 65 CNEL[2] 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.

4.13.3 Mitigation Measures

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

- Construction is not permitted during the hours of 6 p.m. to 7 a.m. Monday through Friday, ~~and~~ between 6 p.m. to 9 a.m.<u>,</u> on Saturday<u>, and prohibited on Sundays and holidays</u>.
- Prior to the start of construction, identify a noise control disturbance coordinator. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of any noise complaint received (e.g. starting too early, bad muffler, etc.) and shall

2 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.

ensure that reasonable measures warranted to correct the problem are implemented as soon as possible.

- Prior to the start of construction, establish a telephone number for the disturbance coordinator, and post it in a conspicuous location on the construction site.
- Prior to the start of construction, notify, in writing, the residents within 800 feet from the center of the project to the south across the rail line and industrial buildings to the north, east, and west of the project site of the construction schedule~~, in writing,~~ and provide a written schedule of "noisy" construction activities to the adjacent land uses.
- Include the telephone number for the disturbance coordinator construction site in the above notice regarding the construction schedule sent to residences south across the rail line and industrial buildings to the north, east, and west of the project site.
- The project owner shall orient construction equipment and locate construction staging areas within the project site away from the nearest residences to the south, to the extent feasible.
- Equip all construction-related internal combustion engine-driven equipment with the best available noise control equipment (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) and use best noise control practices to minimize noise levels from construction activities.

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

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4.14 Population and Housing

This section describes the environmental setting and regulatory background, and discusses impacts associated with the construction and operation of the project specific 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. Nearby cities include San Jose, Campbell, Sunnyvale, and Mountain View. As discussed further below, staff considers 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. Staff considers the city of Santa Clara and neighboring cities as the primary study area for population and housing-related impacts and the San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (MSA), which covers San Benito and Santa Clara counties, as the setting for labor supply for the project.

Population Growth

Table 4.14-1 shows the historical and projected populations for the cities within proximity of the project site, plus Santa Clara County as a whole. Population projections between 2020 and 2040 show growth ranging from 7.8 to 48.2 percent, or 0.4 to 2.4 percent on average per year in the cities within and around the project site.

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).

TABLE 4.14-1 HISTORICAL AND PROJECTED POPULATIONS

Area	2010	2020	2030	2040	Projected Population Change 2020-2040 Percent (%)	Projected Population Change 2020-2040 Percent per Year (%)
Santa Clara	114,115	131,665	142,425	159,500	21.1	1.0
San Jose	958,585	1,028,210	1,189,660	1,377,145	33.9	1.7
Campbell	39,349	43,700	46,170	47,120	7.8	0.4
Sunnyvale	145,225	149,935	162,975	222,210	48.2	2.4
Mountain View	76,360	111,725	119,445	138,980	24.4	1.2
Santa Clara County	1,781,642	1,986,340	2,217,750	2,538,320	27.8	1.4

Sources: ABAG 2019

Housing

Table 4.14-2 presents housing supply data for the project area. Year 2020 housing estimates indicated 31,293 vacant housing units within Santa Clara County representing a vacancy rate of 4.6 percent (CA DOF 2021).

TABLE 4.14-2 HOUSING SUPPLY ESTIMATES IN THE PROJECT AREA

Housing Supply		2021 Total	2021 Vacant
Santa Clara	Number	51,041	2,756
	Percent	100	5.4
San Jose	Number	337,442	12,823
	Percent	100	3.8
Campbell	Number	18,195	1,383
	Percent	100	7.6
Sunnyvale	Number	60,761	2,977
	Percent	100	4.9
Mountain View	Number	37,820	2,610
	Percent	100	6.9
Santa Clara County	Number	680,298	31,294
	Percent	100	4.6

Source: CA DOF 2021

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 MSA.

TABLE 4.14-3 PROJECTED EMPLOYMENT GROWTH			
San Jose-Sunnyvale-Santa Clara MSA	**Year 2018**	**Year 2028**	**Percent Change**
Construction Trades Workers	38,350	41,380	7.9
Computer and Information Systems Managers	14,110	15,760	11.7

Source: CA EDD 2021

Regulatory Background

No regulations related to population and housing apply to the project.

4.14.2 Environmental Impacts

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)?

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 or land use designation changes 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 interruptions occurred and would not be an extension of infrastructure serving customers or entities beyond the boundaries of the project parcel that would result in indirect population growth.

Construction of the first phase would last approximately 14 months. Construction of the second phase and third phase would each take approximately 11 months to complete. Phase I would include a construction workforce with a peak number of workers of approximately 150 per month and an average of approximately 100 per month (Vantage 2021 pg. 2-11). Phase II construction would begin as soon as commercially feasible, likely in late 2023, and take approximately 11 months to complete for commercial operation at the beginning of 2025. The Phase II construction workforce is estimated to have a peak number of workers of approximately 200 per month with an average of approximately 80 per month (Vantage 2021 pg. 2-11).

As shown in **Table 4.14.-3** above, there is a sufficient local construction workforce, with approximately 41,000 construction trades workers projected by 2028, in the project area MSA to accommodate the projected labor needs for construction of the project. The Phase I estimated peak construction workforce of 150 workers per month would account for .003 percent or less of the available projected Construction Trades Workers in the project area MSA. Similarly, the Phase II estimated peak workforce of 200 workers per month would account for .005 percent or less of the available projected Construction Trades Workers in the project area MSA. With a local construction workforce available to serve

the project, it is not expected workers would come from outside the area and no construction workers are expected to seek temporary lodging closer to the project site. Therefore, the project's construction workforce would not directly or indirectly induce substantial population growth in the project area. The impacts would be less than significant.

Operation

Less Than Significant Impact. The applicant anticipates the project would require a total of 19-21 permanent employees, with approximately 10-14 rental space tenant employees visiting the facility daily (Vantage 2021 pg. 4-135). As shown in **Table 4.14.-3**, there is a sufficient local workforce, with approximately 15,000 Computer and Information Systems Managers projected by 2028, in the project area's MSA to accommodate the projected permanent labor needs of the project. The permanent workforce of 21 workers would account for .001 percent or less of the available projected Computer and Information Systems Managers workforce in the project area's MSA. Furthermore, this permanent employment is well within the projected growth in this job sector, as shown in **Table 4.14-3**. Lastly, while the type of rental space tenant employees is not known, the small, anticipated number of employees (10-14 workers) is also not expected to induce substantial population.

If some workers were to relocate to the project area, housing data shows a vacancy rate of 5.4 percent in the city of Santa Clara and 3.8 percent in the nearby city of San Jose (refer to **Table 4.14-2**). Available housing counts in the project area indicate a sufficient supply of available housing units would be available for operations workers should they seek housing closer to the project and would not result in unplanned population growth. Therefore, the project's operations workforce would not directly or indirectly induce substantial population growth in the project area. The impact would be less than significant.

b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction and Operation

No Impact. The 6.69-acre property is zoned Light Industrial (ML) and is currently developed with an approximately 115,000-square-foot, single-story office and warehouse building and associated paved surface parking and loading dock. While the existing office and warehouse buildings would be demolished, these structures do not contain any housing. As a result, no people or houses would be displaced 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.

4.14.4 References

ABAG 2019 – Association of Bay Area Governments (ABAG). Projections 2040 by Jurisdiction. Data last updated May 1, 2019. Available online at: https://data.bayareametro.gov/Demography/Projections-2040-by-Jurisdiction/grqz-amra

CA DOF 2021 – California Department of Finance (CA DOF). E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2021. Data last updated May 2021. Available online at: http://dof.ca.gov/Forecasting/Demographics/Estimates/E-5/

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